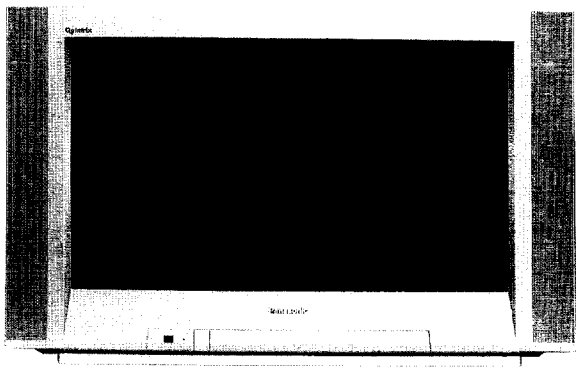
ORDER No. SM-00002

Service Manual



Colour Television

TX-28DK1

EURO-4 Chassis

SPECIFICATIONS

Power Source:	220-240V a.c., 50Hz	
Power Consumption:	93W	
Stand-by Power Consumption:	1.4W	
Aerial Impedance:	75Ω unbalanced, Coaxial Type	
Receiving System:	PAL I, PAL-525/60 M.NTSC NTSC (AV only)	
Receiving Channels:	UHF E21-E69	
Intermediate Frequency:		
Video/Audio		
Video	39.5MHz	
Audio	33.5MHz 32.95MHz (NICAM)	
Colour	35.07MHz	
Terminals:		
AUDIO MONITOR OUT	Audio (RCAX2)	500mV 1kΩ
AV1 IN	Video (21 pin) Audio (21 pin) RGB (21 pin)	1V p-p 75Ω 500mV rms 10kΩ
AV1 OUT	Video (21 pin) Audio (21 pin)	1V p-p 75Ω 500mV rms 1kΩ
AV2 IN	Video (21 pin) Audio (21 pin) S-Video IN (21-pin)	1V p-p 75Ω 500mV rms 10kΩ Y: 1V p-p 75Ω C: 0.3V p-p 75Ω
AV2 OUT	Video (21 pin) Audio (21 pin) Selectable output (21 pin)	1V p-p 75Ω 500mV rms 1kΩ
AV3 IN	S-Video IN (4-pin) Audio (RCAx2) Video (RCAx1)	Y: 1V p-p 75Ω C: 0.3V p-p 75Ω 500mV rms 10kΩ 1V p-p 75Ω
High Voltage:	30.5kV ± 1kV	
Picture Tube:	W66EHK51X36	66cm
Audio Output: (Music Power)	Front Left/Right	2 x 15W
Headphones:	8Ω Impedance 3.5mm	
Accessories supplied:	Remote Control 2 x R6 (UM3) Batteries VS-DK1/2 Video Cabinet	
Dimensions:		
Height:	514mm	
Width:	796mm	
Depth:	514mm	
Net weight:	36kg	

Specifications are subject to change without notice.
Weights and dimensions shown are approximate.

NOTE: This Service Manual should be used in conjunction with the EURO-4 Technical guide.

Panasonic

Panasonic CS (U.K.) Ltd.
WILLOUGHBY ROAD,
BRACKNELL,
BERKS.,
RG12 8FT.

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SAFETY PRECAUTIONS

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the a.c. supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts that have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the a.c. outlet.
5. Potentials as high as 31.5kV are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazard.

LEAKAGE CURRENT COLD CHECK

1. Unplug the a.c. cord and connect a jumper between the two prongs of the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered a.c. plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials, connectors, control shafts etc. When the exposed metallic part has a return path to the chassis, the reading should be between 4M ohm and 20M ohm. When the exposed metal does not have a return path to the chassis, the reading must be infinite.

LEAKAGE CURRENT HOT CHECK

1. Plug the a.c. cord directly into the a.c. outlet. Do not use an isolation transformer for this check.
2. Connect a 2kΩ 10W resistor in series with an exposed metallic part on the receiver and an earth, such as a water pipe.
3. Use an a.c. voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed metallic part and check the voltage at each point.
5. Reverse the a.c. plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1.4V rms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

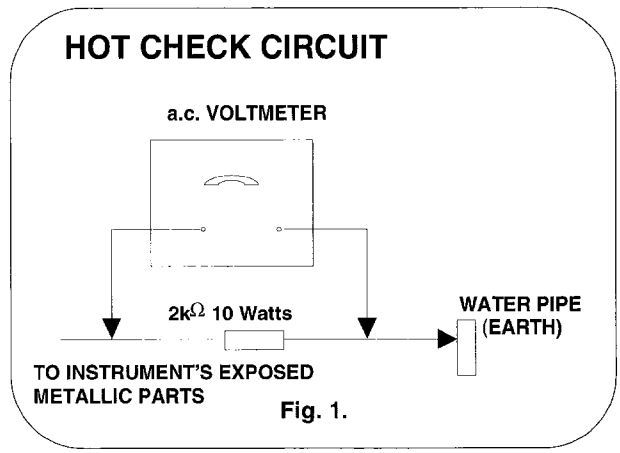


Fig. 1.

X-RADIATION WARNING

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that the jig is capable of handling 31.5kV without causing X-Radiation.

NOTE: It is important to use an accurate periodically calibrated high voltage meter.

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate. 30.5kV ± 1kV.
   If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

SERVICE HINTS

How to remove the rear cover

1. Remove the 9 screws as shown in **Fig. 2.**

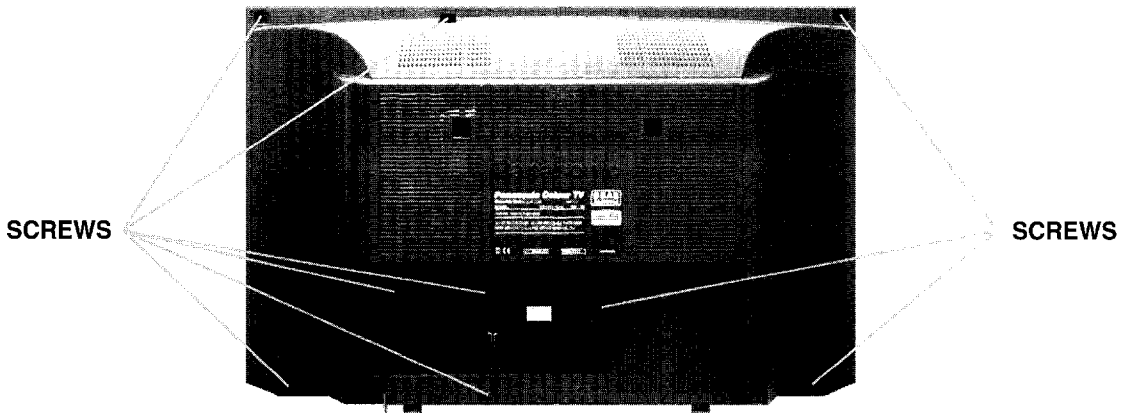


Fig. 2.

LOCATION OF CONTROLS

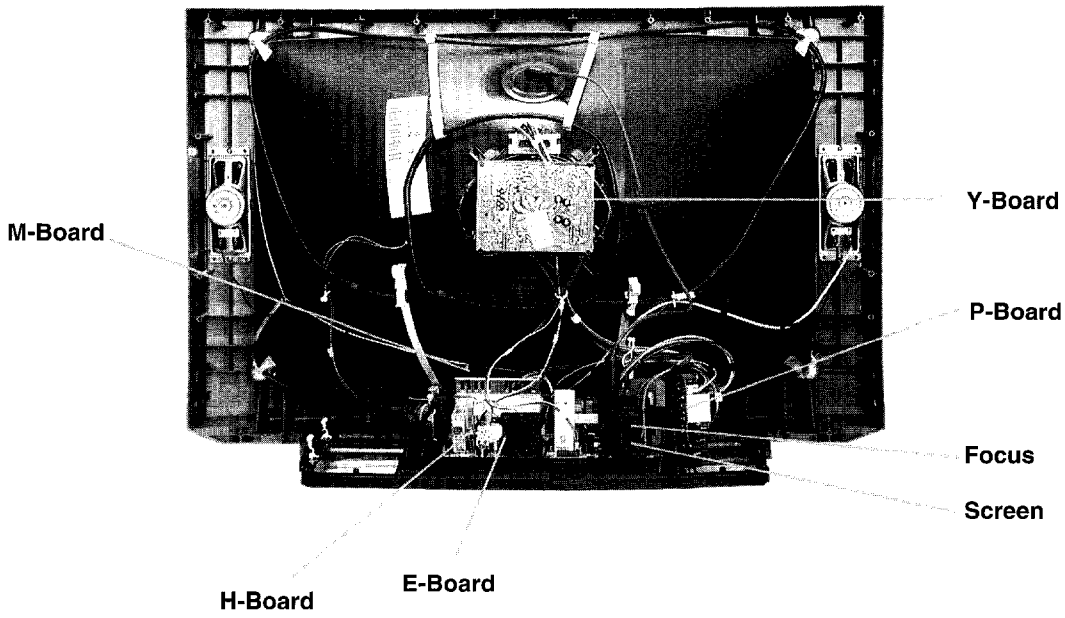


Fig. 3.

HOW TO MOVE THE CHASSIS INTO SERVICE POSITION

1. Remove the bead clamper from the mains lead and affix, using back cover screw, into top right-hand cabinet rib **(A)**, shown in **Fig. 4.**
2. Hold and lift the rear of the chassis and gently pull the chassis toward you, as shown in **Fig. 4.**
3. Release the respective wiring clips and rotate the chassis vertically through 90°, anti-clockwise.
4. Locate the base of the chassis frame into location **(C)**, shown in **Fig. 5. / Fig. 7.**
5. Clip the chassis frame onto the bead clamper, shown in **Fig. 5. / Fig. 6.**
6. After servicing replace the bead clamper, and ensure all wiring is returned to its original position before returning the receiver to the customer.

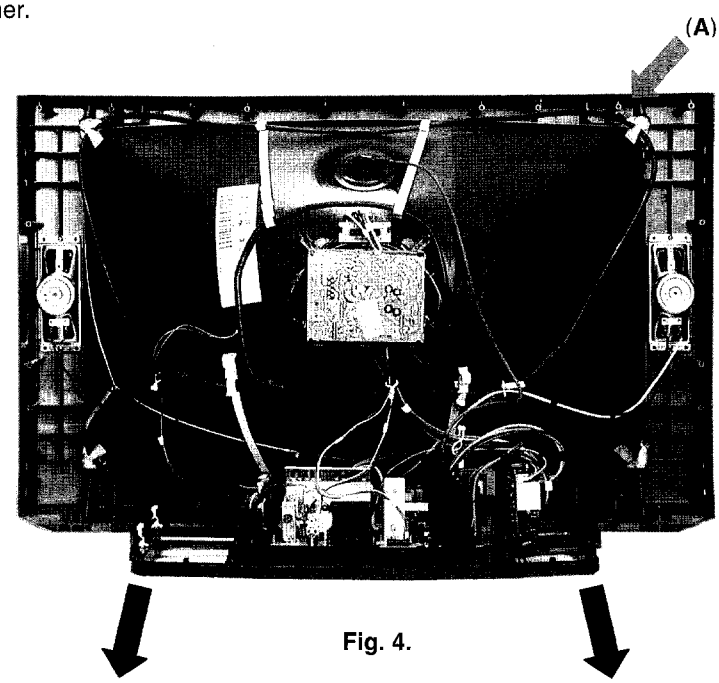


Fig. 4.

Fig. 6.

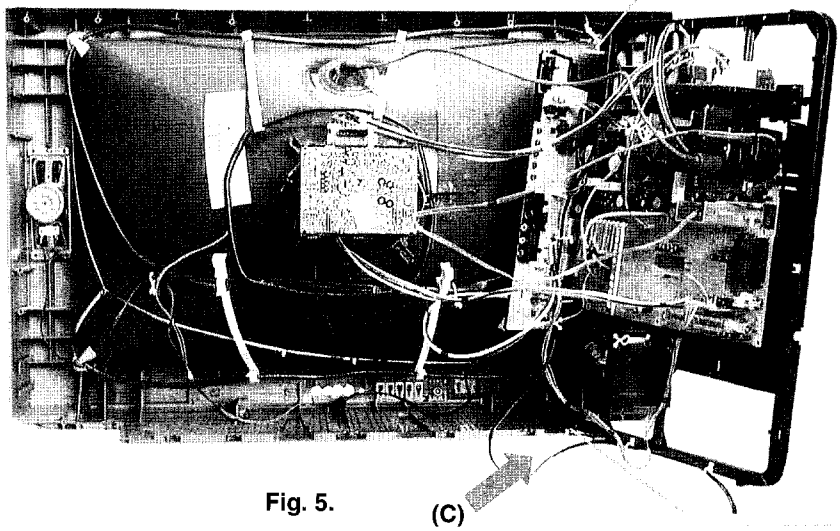


Fig. 5.

Fig. 7.

ADJUSTMENT PROCEDURE

Item / Preparation	Adjustments
+B SET-UP 1. Receive a Greyscale signal. 2. Set the controls :- Brightness: Minimum Contrast: Minimum Volume: Minimum	1. Set the +B voltage up as follows:- Adjust **R811** so that **B2** shows 148V ± 1V. 2. Confirm the following voltages. **B9** 5 ± 0.25V **B10** 5 ± 0.25V **B5** 12 ± 0.5V **B11** 33 ± 1.5V **B4** 15.5 ± 1V **B7** 8 ± 0.5V **B12** 26 ± 1V **B8** 5.5 ± 0.5V **B3** 39 ± 1.5V **B13** 13 ± 1V **B1** 215 ± 10V **B14** -13 ± 1V
CUT OFF / Ug2 Test 1. Receive a Greyscale signal. 2. Degauss the tube externally. 3. Set the TV into Service Mode 1. 4. Select Cut off mode.	To adjust Cutoff connect an oscilloscope to the Blue cathode. Press "**STR**" and adjust "cutoff" value using the "**Yellow**" and "**Blue**" buttons until the black level is 160V ± 5V press "**STR**" to store the value. Remove the oscilloscope. Select Ug2 adjustment and adjust the screen VR until the display shows "O.K."

FACTORY SETTINGS

To return customer settings to factory settings and clear owner ID of all information input by the customer, enter Self-Check mode. Press the down (**-/v**) button on the customer controls at the front of the TV set, at the same time pressing the **STATUS** button [+] on the remote control. To exit Self Check, switch off the TV set at the power button.
NOTE: Self Check should only be used when refurbishing the TV set and not during normal repair work.

VDP	O.K.	PCB	O.K.
TUN	O.K.	Cab	O.K.
E2	O.K.	Sum	Factory use only
MSP	O.K.		
DPL	-.-		
OPTION 1	00		
OPTION 2	A1		
OPTION 3	02		
OPTION 4	00		
OPTION 5	B1		
OPTION 6	E9		

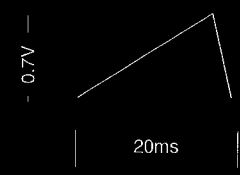
If the CCU ports have been checked and found to be incorrect or not located then " - - " will appear in place of "O.K.".

Service Aids
To aid in the service of our current chassis there are a number of Service Aids which have been made available.

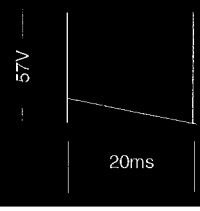
- **LUCI** interface kit (**L**inked **U**tility **C**omputer **I**nterface)
  Part number: TZS6EZ002
  This contains interface and cables for connecting TV service connector and a PC as well as diagnostic software. As new models are introduced upgrade software will become available.
- **VICI** (**V**isual **I**nteractive **C**omputer **I**nformation)
  These C.D.'s contain multimedia documentation providing quick access to service information.
  Part No. TZS7EZ006, TZS7EZ005, TZS8EZ001 & TZS9EZ001
  1. Service Manuals
  2. Instruction Books
  3. Technical Information
- **TASMIN** (**T**echnically **A**dvanced **S**ystem for **M**ultimedia **I**nteractive **N**otes)
  As well as providing a first step towards more interactive training this product also achieves quick access to Technical Information.

WAVEFORM PATTERN TABLE

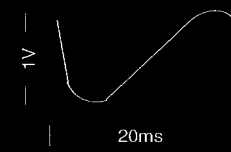
Vert Out
IC601 Pin 31



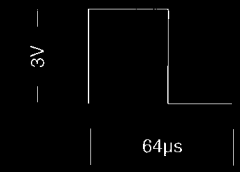
Vert Drive
IC451 Pin 2



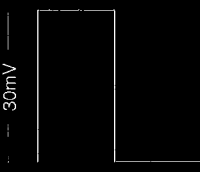
VFLB
IC451 Pin 3



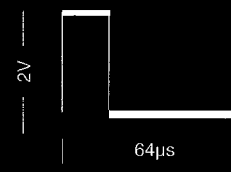
H - Out
IC601 Pin 50



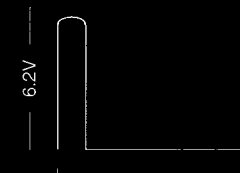
H - Out
IC701 Pin 5



H - Pulse
Base Q503

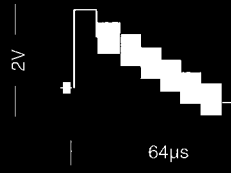


HFLB
IC601 Pin 13

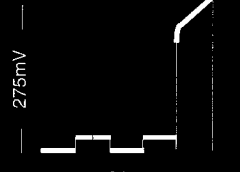


HFLB
IC701 Pin 8

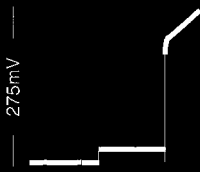
Video Out
IC601 Pin 59



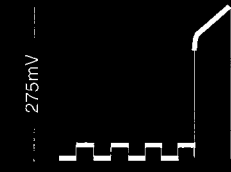
R - Out
IC601 Pin 37



G - Out
IC601 Pin 38



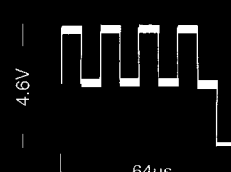
B - Out
IC601 Pin 39



R - Out
E8 Pin 5

G - Out
E8 Pin 3

B - Out
E8 Pin 4



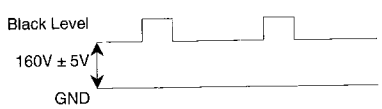
SCL
IC1201 Pin 3

SVM Out
IC601 Pin 34

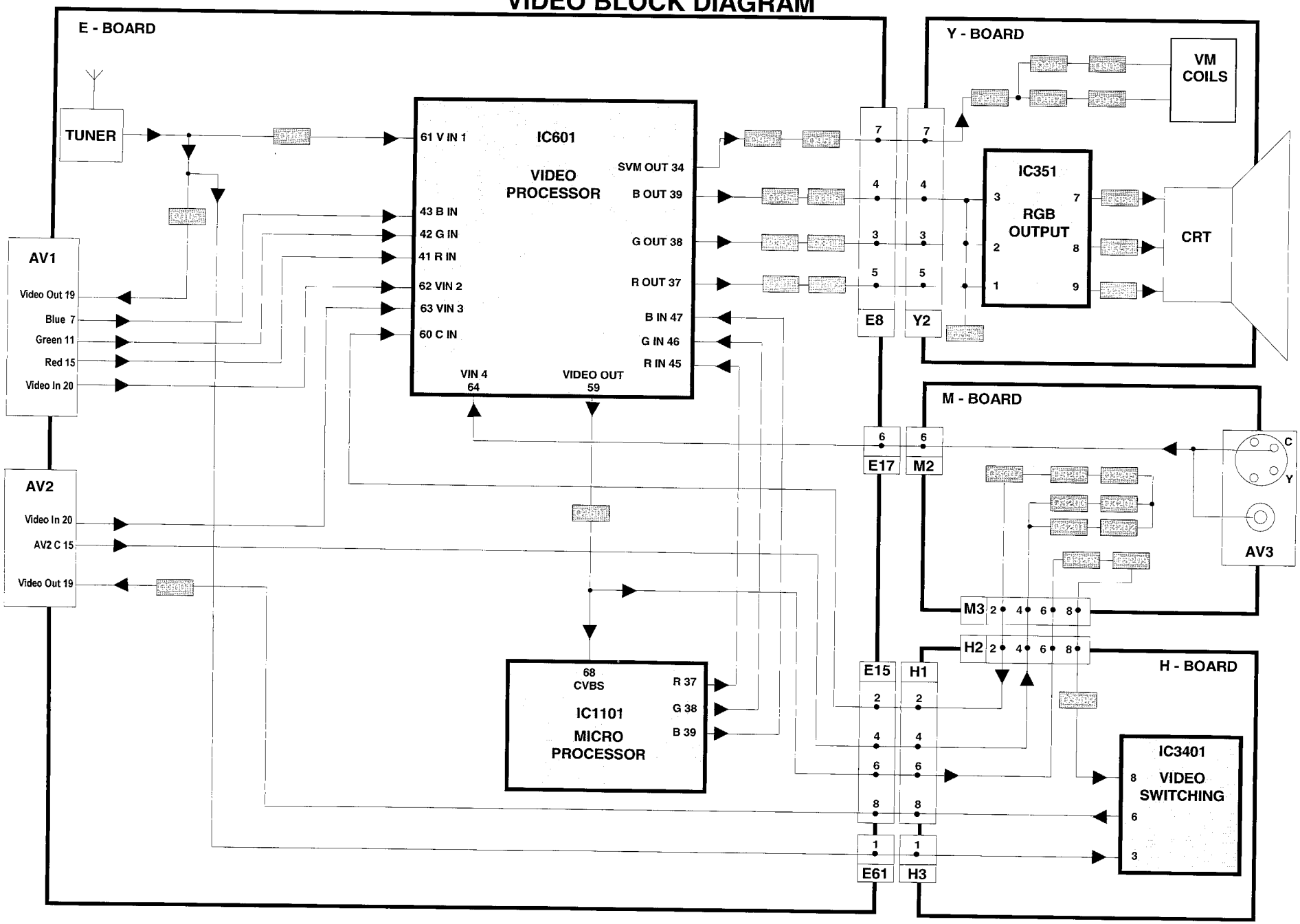
ALIGNMENT SETTINGS

(The figures below are nominal and used for representative purposes only.)

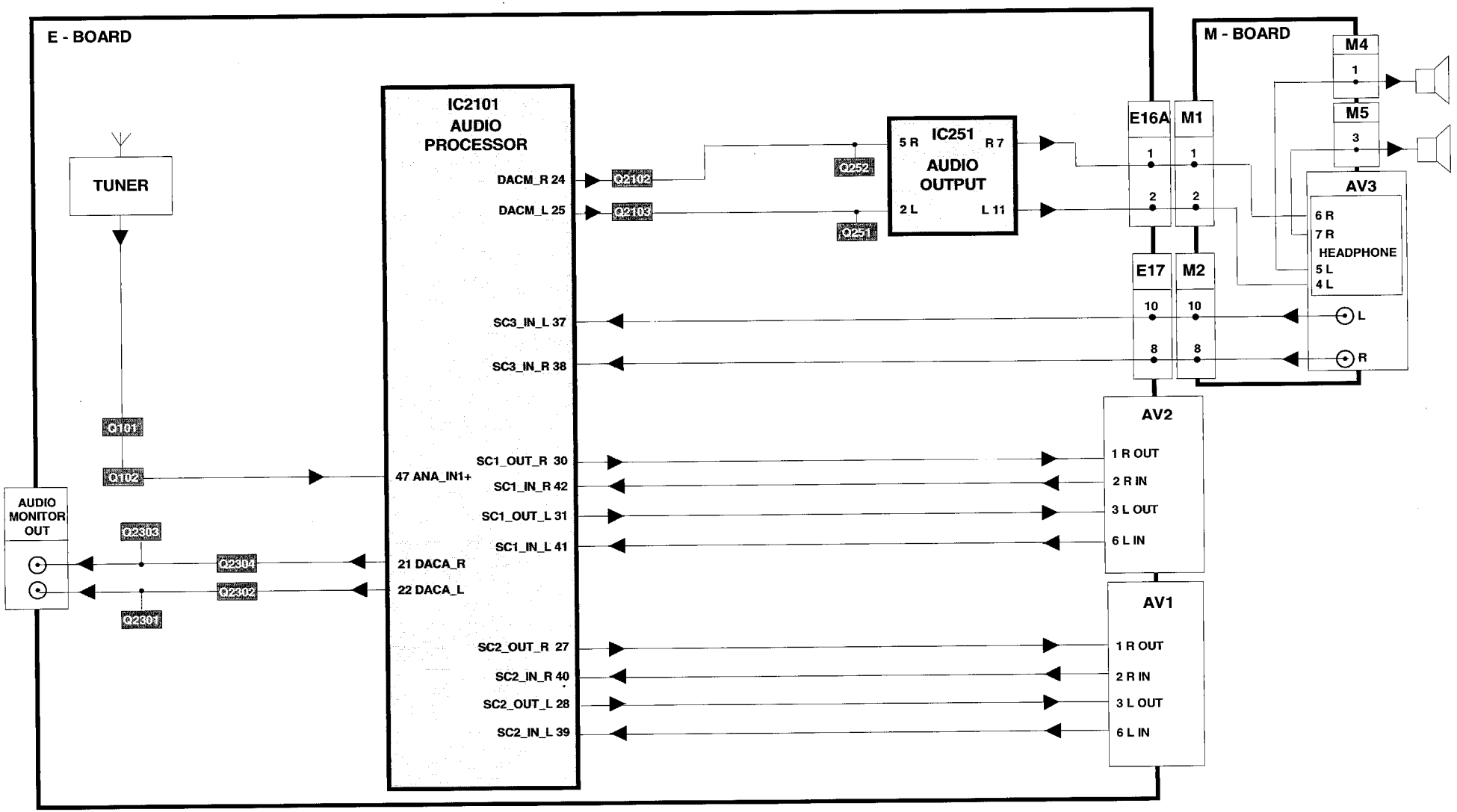
1. Set the Bass to maximum position, set the Treble to minimum position, press the down button (**- / v**) on the customer controls at the front of the TV and at the same time press the **INDEX** button on the remote control, this will place the TV into the Service Mode.
2. Press the **RED / GREEN** buttons to step up / down through the functions.
3. Press the **YELLOW / BLUE** buttons to alter the function values.
4. Press the **STR** button after each adjustment has been made to store the required values.
5. To exit the Service Mode, press the "**N**" button.

Alignment Function		**Settings / Special features**
Horizontal Position	H-Pos 061	Optimum setting.
Vertical Position	V-Pos 005	Optimum setting.
Horizontal Amplitude	H-Amp 055	Optimum setting.
Vert. Amplitude	V-Amp 054	Optimum setting.
EW-amplitude	E/W-Amp1 -128	Optimum setting.
EW-amplitude	E/W-Amp2 006	Optimum setting.
Trapezium-comp	Trapez-1 047	Optimum setting.
Trapezium-comp	Trapez-2 -128	Optimum setting.
Vertical Linearity	V-Lin 006	Optimum setting.
Vertical Symmetry	V-Sym 002	Optimum setting.
DVCO	DVCO -005	Receive a PAL Colour Bar Pattern. For DVCO alignment press "**Blue**" button, wait until the colours are changing slowly and press "**STR**".
Cut-off DC	Cut-off 0171	To adjust Cutoff connect an oscilloscope to the blue cathode. Press "**STR**" and adjust "cutoff" value using the "**Yellow**" and "**Blue**" buttons until the black level is 160V ± 5V press "**STR**" to store the value. Remove the oscilloscope. Select Ug2 adjustment and adjust the screen VR until the display shows "O.K."
Ug2 Test	Ug2 055 O.K.	
Highlight Lowlight	High 0902 0777 0864 Low 0117 0132 0112	Optimum setting.
Sub-Brightness	Sub-Brightness 255	Optimum setting.

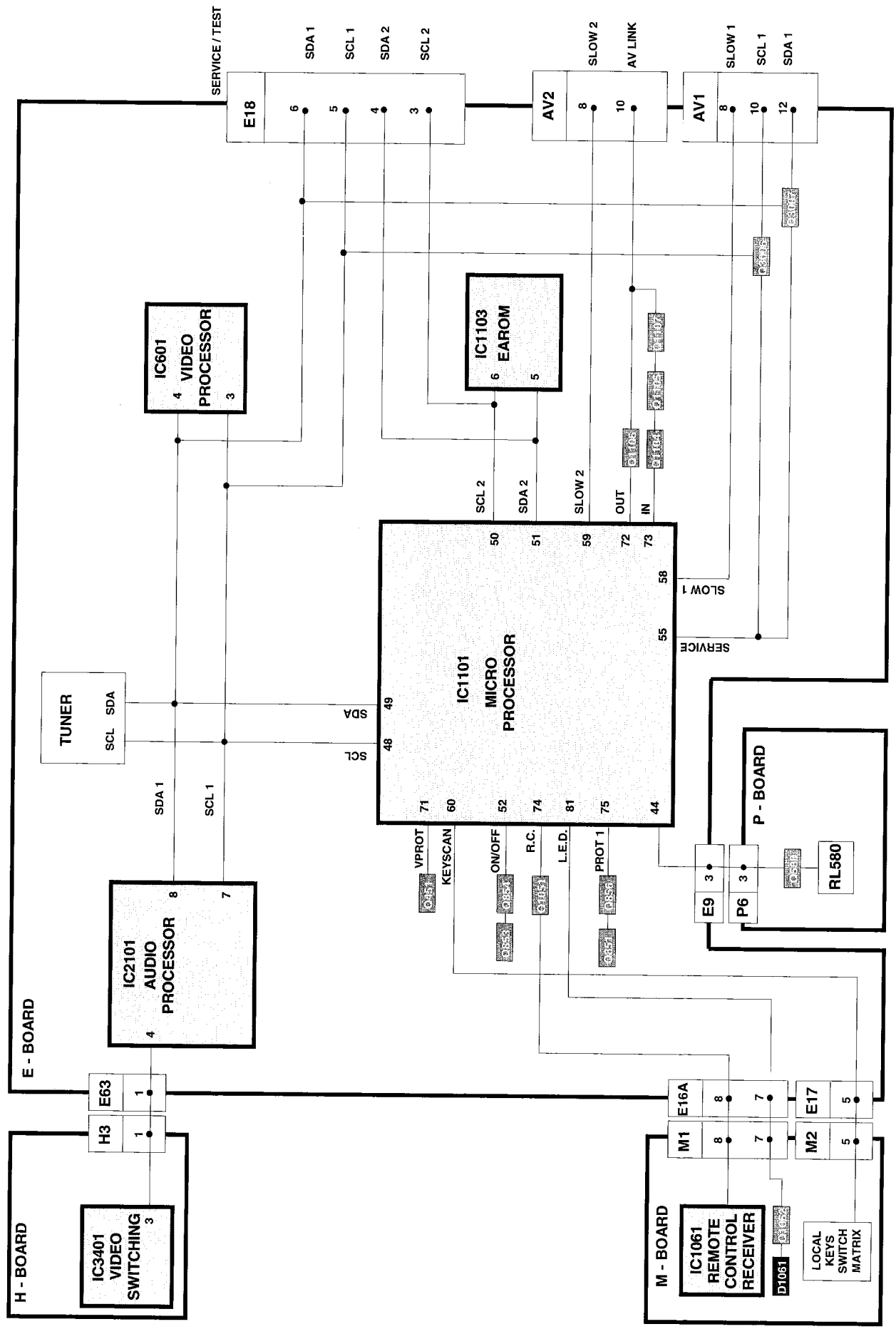
VIDEO BLOCK DIAGRAM



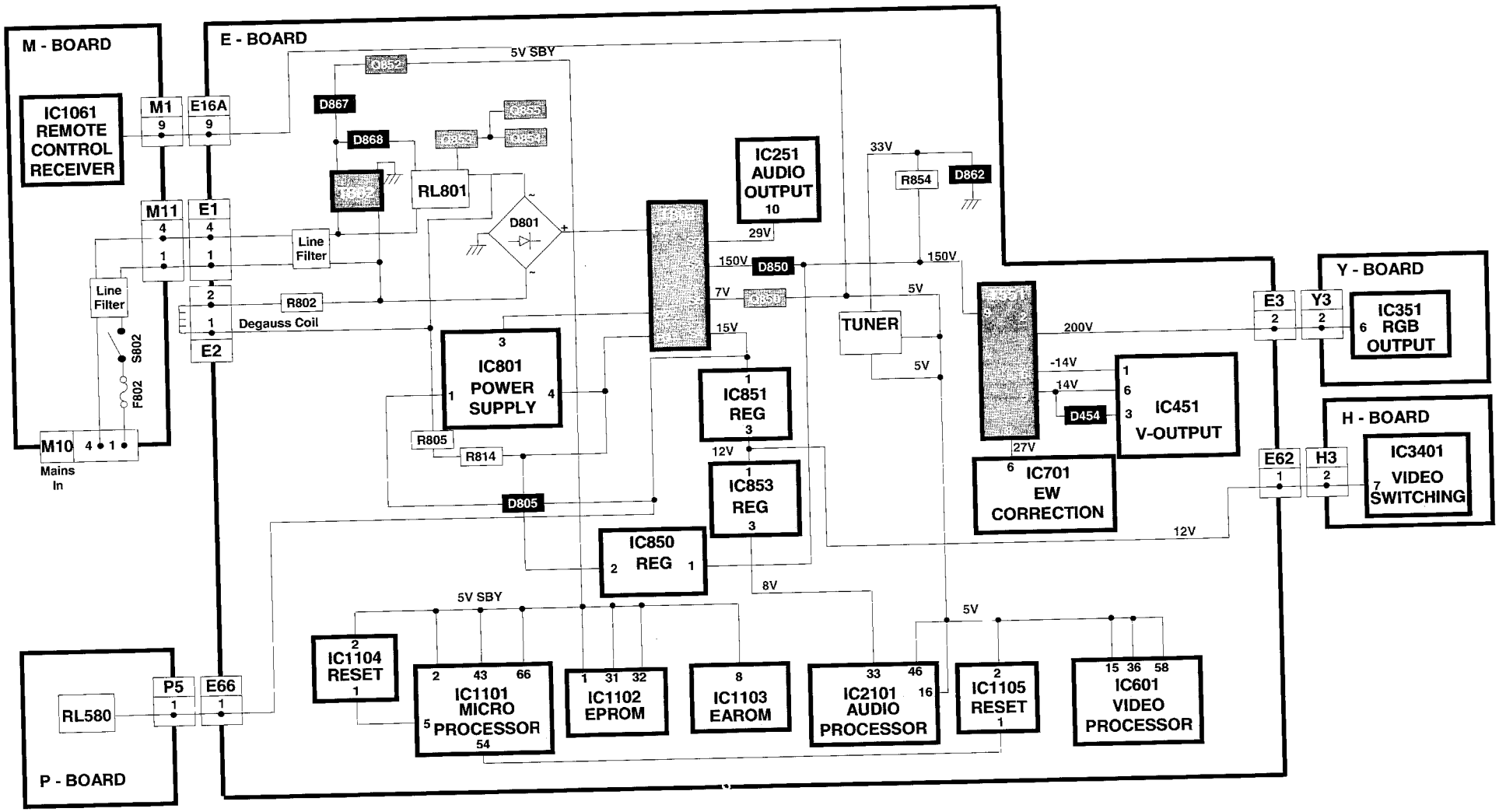
AUDIO BLOCK DIAGRAM



CONTROL BLOCK DIAGRAM

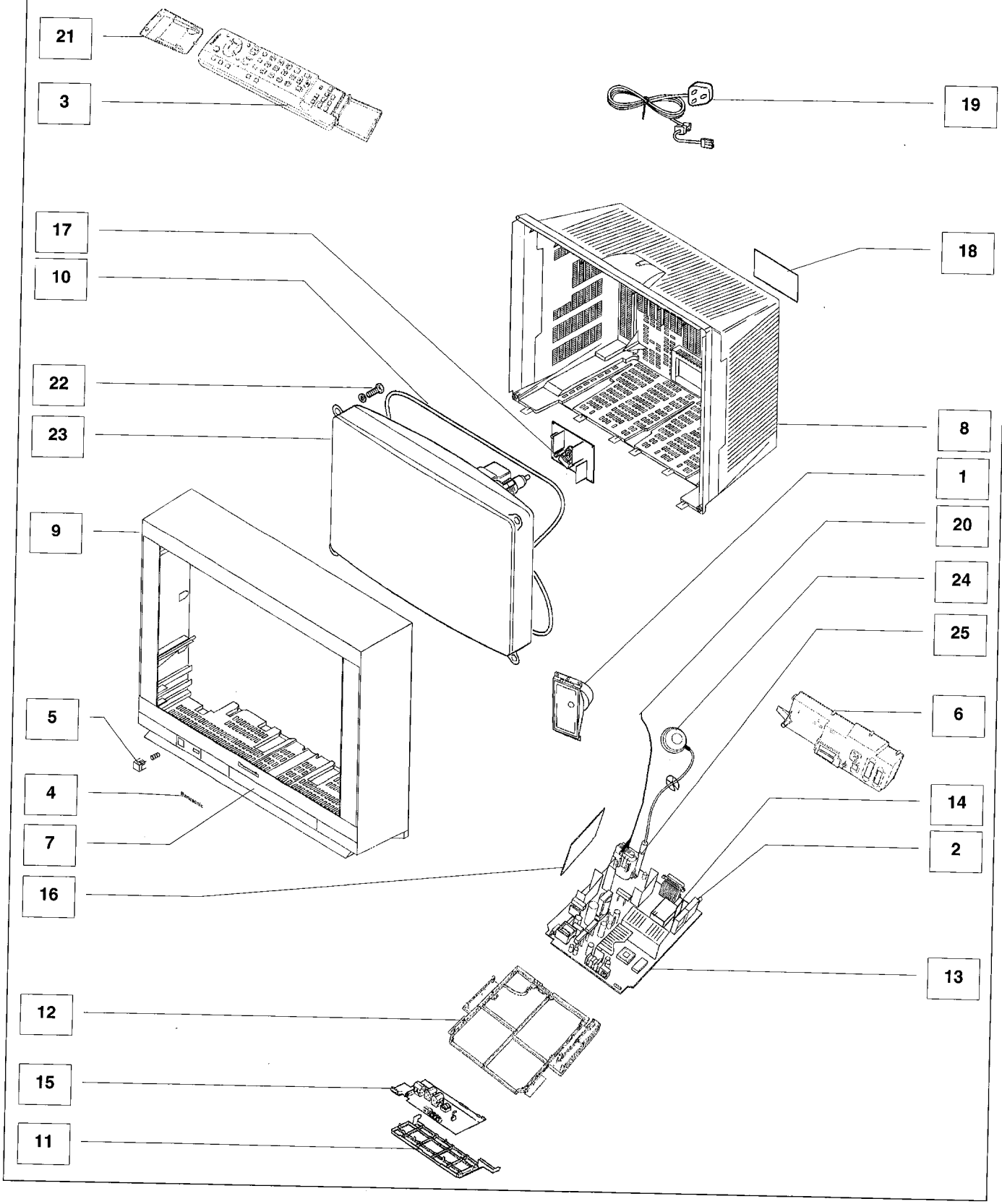


POWER SUPPLY BLOCK DIAGRAM



PARTS LOCATION

NOTE:
The numbers on the exploded view below refer to the mechanical section of the Replacement Parts List.



REPLACEMENT PARTS LIST

Important Safety Notice

Components Identified by ⚠ mark have special characteristics important for safety.
* When replacing any of these components, use only manufacturers specified parts.
In case of ordering these spare parts, please always add the complete Model-Type number to your order.

Cct Ref	Parts Number	Description	
MECHANICAL PARTS			
1	EASG15S506A2	SPEAKER	
2	ENG27506GR	TUNER	⚠
3	EUR511210	REMOTE CONTROL	
4	TBM8E1928	PANASONIC BADGE	
5	TBX8E078	POWER BUTTON	
6	TKP8E1301	REAR AV PANEL	
7	TKP8E1308	DOOR LID	
8	TKU8E00600	BACK COVER	
9	TKY8E500	CABINET	
10	TLK8E05132	DEGAUSS COIL	⚠
11	TMW8E031	CONTROL BRACKET	
12	TMX8E037	CHASSIS FRAME	
13	TNP8EE009EN	E P.C.B.	
14	TNP8EH002AB	H P.C.B.	⚠
15	TNP8EM021AE	M P.C.B.	
16	TNP8EP018AC	P P.C.B.	
17	TNP8EY012AG	Y P.C.B.	⚠
18	TQF8E2972	MODEL LABEL	
19	TSX8E0042	POWER CORD	⚠
20	TXFJTE4BNMG2	FOCUS LEAD ASSY	⚠
21	UR51EC904A	BATTERY COVER (REMOTE)	
22	VP17005-32	CRT FIXING SCREW	
23	W66EHK51X36	C.R.T.	⚠
24	ZTBZAD550A	ANODE CABLE	⚠
25	ZTFM05002A	F.B.T.	⚠
MISCELLANEOUS COMPONENTS			
.	31221212478	FIX CLIP	
.	832AG11D-ESL	IC SOCKET	
.	F9-4-220	RELAY	
.	PCSZT-084A-1	IC SOCKET	
.	TBM8E1942	AV PANEL LABEL	
.	TBM8E1976	PRESET LABEL (L)	
.	TBM8E1977	PRESET LABEL (R)	
.	TEK6940	LID CATCH	
.	TES8E019	POWER BUTTON SPRING	
.	TKP8E1310	IR COVER	
.	TMW8E030	LED HOLDER	
.	TPC8E4824	CARTON	
.	TPD8E724	TOP CUSHION	
.	TPD8E725	BOTTOM CUSHION	
.	UM-3DJ-2P	BATTERY PACK	
.	VS-DK1/2	VIDEO CABINET	
PCH1	TMX8E041	PCB BRACKET	
R802	232266296706	THERMISTOR	⚠
RL580	DH12D1-O-Q	RELAY	
RL801	TSE1885-1	RELAY	
S351	0330550049	CRT SOCKET	
INSTRUCTION BOOKS			
.	TQB8E3115	ENGLISH	

Cct Ref	Parts Number	Description	
I.C.s			
IC251	LA4282	AUDIO OUTPUT	
IC351	TDA6103Q-N3	R.G.B. OUTPUT	
IC451	LA7845N	VERTICAL OUTPUT	
IC601	VDP3120BPPC2	VIDEO PROCESSOR	
IC701	TEA2031A	E/W CORRECTION	
IC801	STRF6654LF57	POWER SUPPLY	
IC850	SE140N	ERROR AMPLIFIER	
IC851	AN78M12-LB	12V REGULATOR	
IC853	AN78L08TA	8V REGULATOR	
IC1061	RPM-637CBRL	LED RECEIVER	
IC1101	SDA5450C59	MICRO PROCESSOR	
IC1102	27C2001-L14	EPROM *	
IC1103	XDG2-01QA	EAROM *	
IC1104	MN1381-R(TA)	RESET	
IC1105	MN1381-T(TA)	RESET	
IC2101	MSP3410DPOC5	AUDIO PROCESSOR	
IC3401	TEA2114	VIDEO SWITCHING	
FUSES			
F802	19181-3.15	FUSE	⚠
F802-1	EYF52BC	FUSE HOLDER	
F802-2	EYF52BC	FUSE HOLDER	
DIODES			
D101	MA3020TX	DIODE	
D102	MA3020TX	DIODE	
D251	MA2180BLFS	DIODE	
D253	MA700TA5	DIODE	
D254	MA700TA5	DIODE	
D354	1SR124-4AT82	DIODE	
D355	1SR124-4AT82	DIODE	
D356	1SR124-4AT82	DIODE	
D357	MA165TA5	DIODE	
D358	MA165TA5	DIODE	
D359	MA165TA5	DIODE	
D360	MTZJT-7715A	DIODE	
D361	MA165TA5	DIODE	
D362	MA165TA5	DIODE	
D363	MA165TA5	DIODE	
D364	MA165TA5	DIODE	
D453	MA165TA5	DIODE	
D454	ERA15-02V3	DIODE	
D456	MTZJT-775.6C	DIODE	
D457	MA165TA5	DIODE	
D501	MA165TA5	DIODE	
D502	1SR124-4AT82	DIODE	
D511	MA4047	DIODE	
D552	RU3LFA1	DIODE	
D553	1SR124-4AT82	DIODE	
D554	1SR124-4AT82	DIODE	
D556	MA165TA5	DIODE	
D557	EU02	DIODE	
D558	1SR124-4AT82	DIODE	

Cct Ref	Parts Number	Description
D580	ERD07-15L7	DIODE
D581	MA165TA5	DIODE
D601	DAN217T146	DIODE
D603	DAN217T146	DIODE
D605	DAN212KT146	DIODE
D606	MA165TA5	DIODE
D607	MA4051	DIODE
D609	1SR124-4AT82	DIODE
D615	STZ6.2NT146	DIODE
D616	STZ6.2NT146	DIODE
D618	MTZJT-778.2C	DIODE
D701	MA165TA5	DIODE
D702	MTZJT-775.6A	DIODE
D704	MA29W-ATA	DIODE
D705	MTZJT-775.6B	DIODE
D706	1SS355TE-17	DIODE
D801	RBV-608LF-B	DIODE
D803	1SR124-4AT82	DIODE
D804	1SR124-4AT82	DIODE
D805	TLP621GR-LF2	PHOTO COUPLER
D806	1SR124-4AT82	DIODE
D807	1SS376TE-17	DIODE
D850	RU4BLF-L1	DIODE
D851	MTZJT776.2B	DIODE
D852	MA165TA5	DIODE
D853	MA2180BLFS	DIODE
D854	TVSRU2AMLFA5	DIODE
D855	FML22SLF610	DIODE
D856	RU4AMLF-M1	DIODE
D857	MTZJT-775.1B	DIODE
D858	MA165TA5	DIODE
D859	MA165TA5	DIODE
D860	MA165TA5	DIODE
D861	MA165TA5	DIODE
D862	MTZJT-7736A	DIODE
D863	MA165TA5	DIODE
D864	MA165TA5	DIODE
D865	MA165TA5	DIODE
D866	MA165TA5	DIODE
D867	EK06-V0	DIODE
D868	1N4150T-77	DIODE
D869	1N4150T-77	DIODE
D870	MA165TA5	DIODE
D871	1N4150T-77	DIODE
D873	MTZJT-775.6C	DIODE
D874	1SR124-4AT82	DIODE
D875	BZX79A75A26A	DIODE
D901	MA165TA5	DIODE
D902	MA165TA5	DIODE
D904	MA165TA5	DIODE
D905	MA165TA5	DIODE
D906	RLS72TE-11	DIODE
D907	MA165TA5	DIODE
D1061	LN81RPHCF3	LED
D1101	MA165TA5	DIODE
D1102	MA165TA5	DIODE
D1104	MA165TA5	DIODE
D1105	MA165TA5	DIODE
D2101	MA723TA5	DIODE
D2102	MA723TA5	DIODE
D2103	MA723TA5	DIODE
D2104	MA723TA5	DIODE
D2105	MTZJT-778.2C	DIODE
D2303	MA723TA5	DIODE
D2304	MA723TA5	DIODE
D3201	MTZJT-778.2C	DIODE
D3202	MTZJT-778.2C	DIODE

TRANSISTORS

Q101	BC847B	TRANSISTOR
Q102	BC847B	TRANSISTOR
Q103	BC847B	TRANSISTOR
Q104	BC847B	TRANSISTOR
Q105	BC847B	TRANSISTOR
Q251	2SD1328STX	TRANSISTOR
Q252	2SD1328STX	TRANSISTOR
Q253	BC847B	TRANSISTOR
Q254	BC847B	TRANSISTOR
Q301	BC847B	TRANSISTOR
Q302	FMY4T148	TRANSISTOR
Q303	BC847B	TRANSISTOR
Q304	FMY4T148	TRANSISTOR
Q305	BC847B	TRANSISTOR
Q306	FMY4T148	TRANSISTOR
Q351	2SA1767	TRANSISTOR
Q352	2SA1767	TRANSISTOR
Q353	2SA1767	TRANSISTOR
Q354	BC857B	TRANSISTOR
Q451	BC857B	TRANSISTOR
Q503	2SD2398-M2	TRANSISTOR
Q551	2SC5517000LB	TRANSISTOR
Q552	2SC1473ATA	TRANSISTOR
Q580	BC547B/126	TRANSISTOR
Q701	BC857B	TRANSISTOR
Q850	2SD2396K-M3	TRANSISTOR
Q851	BC857B	TRANSISTOR
Q852	2SD1858TV2	TRANSISTOR
Q853	BC847B	TRANSISTOR
Q854	BC847B	TRANSISTOR
Q855	BC847B	TRANSISTOR
Q856	BC847B	TRANSISTOR
Q857	2SA1018QTA	TRANSISTOR
Q905	BC847B	TRANSISTOR
Q906	BC847B	TRANSISTOR
Q907	BC857B	TRANSISTOR
Q908	2SA1535ARLB	TRANSISTOR
Q909	2SC3944ARLB	TRANSISTOR
Q950	BC847B	TRANSISTOR
Q951	FMY4T148	TRANSISTOR
Q1051	BC847B	TRANSISTOR
Q1062	BC847B	TRANSISTOR
Q1101	BC847B	TRANSISTOR
Q1104	BC847B	TRANSISTOR
Q1105	BC847B	TRANSISTOR
Q1106	BC847B	TRANSISTOR
Q1107	BC847B	TRANSISTOR
Q1108	BC847B	TRANSISTOR
Q2101	BC857B	TRANSISTOR
Q2102	BC857B	TRANSISTOR
Q2103	BC857B	TRANSISTOR
Q2301	BC847B	TRANSISTOR
Q2302	BC857B	TRANSISTOR
Q2303	BC847B	TRANSISTOR
Q2304	BC857B	TRANSISTOR
Q3001	BC847B	TRANSISTOR
Q3006	BC847B	TRANSISTOR
Q3007	BC847B	TRANSISTOR
Q3201	BC847B	TRANSISTOR
Q3202	BC847B	TRANSISTOR
Q3203	BC857B	TRANSISTOR
Q3204	BC857B	TRANSISTOR
Q3205	BC847B	TRANSISTOR
Q3206	BC847B	TRANSISTOR

Cct Ref	Parts Number	Description	
Q3207	BC847B	TRANSISTOR	
Q3208	BC847B	TRANSISTOR	
Q3209	BC847B	TRANSISTOR	
Q3401	BC847B	TRANSISTOR	
Q3402	BC847B	TRANSISTOR	
Q3601	BC847B	TRANSISTOR	
TRANSFORMERS			
T501	ETH19Y173AY	TRANSFORMER	⚠
T801	ETS42AE2F6AD	TRANSFORMER	⚠
T802	ETP35KAN619U	TRANSFORMER	⚠
COILS			
J208	EXCELSA35V	COIL	
L101	TLT100K991R	COIL	
L102	TLT068K991R	COIL	
L104	EXCELSA35T	COIL	
L105	TLTACTR47K	COIL	
L106	TLTACT100K	COIL	
L107	TLTACT6R8K	COIL	
L114	ELJFC2R2KF	COIL	
L115	ELJFC2R2KF	COIL	
L301	TLTACT4R7K	COIL	
L302	TLTACT4R7K	COIL	
L451	EXCELSA35T	COIL	
L501	EXCELSA35T	COIL	
L580	ELC08D682E	COIL	
L581	ELH5L6123	COIL	
L582	ELC18B102E	COIL	
L585	ELC18B151L	COIL	
L601	TLTACT4R7K	COIL	
L602	TLTACT4R7K	COIL	
L603	TLTACT4R7K	COIL	
L604	TLTACT4R7K	COIL	
L606	TLTACT4R7K	COIL	
L607	ELJFC2R2KF	COIL	
L701	ELC10D682E	COIL	
L850	EXCELSA35T	COIL	
L851	EXCELSA35T	COIL	
L852	ELEIE470KA	COIL	
L855	EXCELSA35T	COIL	
L856	EXCELSA39V	COIL	
L901	EXCELSA24T	COIL	
L902	EXCELSA24T	COIL	
L1061	TLT331K991R	COIL	
L1103	TLTACT100K	COIL	
L1104	EXCELSA35T	COIL	
L1105	ELJFC2R2KF	COIL	
L2101	TLTACT100K	COIL	
L2103	EXCELSA35T	COIL	
L2104	TLTACT4R7K	COIL	
L3001	ELEMV1R5MA	COIL	
L3002	ELEMV1R5MA	COIL	
L3003	ELEMV1R5MA	COIL	
L3004	ELEMV1R5MA	COIL	
L3005	ELEBR2R2KA	COIL	
L3006	ELEBR2R2KA	COIL	
L3007	TLTACT2R2K	COIL	
L3201	ELEBR6R8KA	COIL	
L3202	ELEBR6R8KA	COIL	
L3203	TLT390K991R	COIL	
L3204	TLT331K991R	COIL	
L3401	ELESN2R2KA	COIL	
L3402	ELESN2R2KA	COIL	
FILTERS			
L804	ELF18N012A	LINE FILTER	
X102	EFCT7004BF	CERAMIC FILTER	

Cct Ref	Parts Number	Description			
CRYSTALS					
X601	4730007267	CRYSTAL			
X1101	TSSA121	CRYSTAL			
X2101	4730007158	CRYSTAL			
RESISTORS					
C101	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA1	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA2	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA2	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA3	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA5	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA8	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA9	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA11	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA13	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA14	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA15	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA16	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA17	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA18	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA21	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA22	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA23	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA25	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA27	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA28	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA29	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA30	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA31	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA32	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA33	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA34	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA35	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA36	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA37	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA38	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA39	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA40	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA43	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA44	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA45	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA46	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA47	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA48	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA49	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA50	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA51	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA52	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA53	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA54	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA55	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA56	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA57	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA58	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA59	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JA60	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JA61	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JSE3	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE4	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE13	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω

Cct Ref	Parts Number	Description			
JSE18	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE22	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE26	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE33	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE35	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE42	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE48	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSE49	ERJ8GEY0R00	S.M.CARB	.125W	5%	0 Ω
JSM7	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSM8	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
JSM10	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R101	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R102	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R103	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R104	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3 Ω
R105	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R106	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680 Ω
R107	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R108	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R109	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R110	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R111	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R112	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R113	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R114	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R115	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R116	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω
R117	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R118	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R121	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R251	ERJ6GEYJ121	S.M.CARB	0.1W	5%	120 Ω
R252	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7 Ω
R253	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18K Ω
R254	ERJ6GEYJ121	S.M.CARB	0.1W	5%	120 Ω
R255	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18K Ω
R256	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R257	ERJ6GEYJ330	S.M.CARB	0.1W	5%	33 Ω
R258	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7 Ω
R259	ERJ6GEYJ330	S.M.CARB	0.1W	5%	33 Ω
R260	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R261	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R262	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R263	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R264	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R265	ERD25TJ2R2	CARBON	0.25W	5%	2R2 Ω
R266	ERD25TJ2R2	CARBON	0.25W	5%	2R2 Ω
R267	ERF7ZK4R7	WOUND	7W	10%	4R7 Ω ⚠
R268	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R269	ERQ14AJ101	METAL	0.25W	5%	100 Ω ⚠
R271	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R272	ERF7ZK4R7	WOUND	7W	10%	4R7 Ω ⚠
R301	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R302	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R303	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R304	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R305	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R306	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R307	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R308	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R309	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R310	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R311	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R312	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R351	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R352	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R353	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω

Cct Ref	Parts Number	Description			
R354	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R355	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R356	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R357	ERG12DJ114V	METAL	0.5W	5%	110K Ω
R358	ERG12DJ114V	METAL	0.5W	5%	110K Ω
R359	ERG12DJ114V	METAL	0.5W	5%	110K Ω
R363	ERD25TJ103	CARBON	0.25W	5%	10K Ω
R364	ERD25TJ103	CARBON	0.25W	5%	10K Ω
R365	ERD25TJ103	CARBON	0.25W	5%	10K Ω
R366	ERDS1TJ152	CARBON	0.5W	5%	1K5 Ω
R367	ERDS1TJ152	CARBON	0.5W	5%	1K5 Ω
R368	ERDS1TJ152	CARBON	0.5W	5%	1K5 Ω
R369	ERDS2TJ472T	CARBON	0.25W	5%	4K7 Ω
R370	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R372	ERQ12AJ121	FUSIBLE	0.5W	5%	120 Ω ⚠
R373	ERJ6GEYJ220	S.M.CARB	0.1W	5%	22 Ω
R374	ERD25TJ274	CARBON	0.25W	5%	270K Ω
R375	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680K Ω
R376	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18K Ω
R377	ERQ12HKR22	FUSIBLE	0.5W	5%	R22 Ω ⚠
R378	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R379	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R380	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R381	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R451	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R452	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R453	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R454	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω
R455	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R456	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R457	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R458	ERD25TJ1R5	CARBON	0.25W	5%	1R5 Ω
R459	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R460	ERDS1TJ331	CARBON	0.5W	5%	330 Ω
R461	ERW2PK1R2	WOUND	2W	10%	1R2 Ω ⚠
R463	ERDS2TJ222T	CARBON	0.5W	5%	2K2 Ω
R464	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8 Ω
R465	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680 Ω
R502	ERJ6GEYJ511	S.M.CARB	0.1W	5%	510 Ω
R506	ERD25TJ560	CARBON	0.25W	5%	56 Ω
R507	ERG2FJ221	METAL	2W	5%	220 Ω ⚠
R509	ERDS1TJ152	CARBON	0.5W	5%	1K5 Ω
R510	ERDS1FJ152	CARBON	0.5W	5%	1K5 Ω ⚠
R555	ERQ12HKR33	METAL	0.5W	5%	R33 Ω ⚠
R558	ERDS1TJ124	CARBON	0.5W	5%	120K Ω
R559	ERQ12HKR33	METAL	0.5W	5%	R33 Ω ⚠
R560	ERJ6GEYJ274	S.M.CARB	0.1W	5%	270K Ω
R561	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω
R563	ERJ6GEYJ684	S.M.CARB	0.1W	5%	680K Ω
R564	ERJ6GEYJ623	S.M.CARB	0.1W	5%	62K Ω
R566	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56K Ω
R567	ERF7ZK1R0	WOUND	7W	10%	1 Ω ⚠
R580	ERG1SJ101	METAL	1W	5%	100 Ω
R581	ERG1SJ152	METAL	1W	5%	1K5 Ω
R583	ERG1SJ152	METAL	1W	5%	1K5 Ω
R585	ERG3FJ102H	METAL	3W	5%	1K Ω ⚠
R586	ERD25TJ682	CARBON	0.25W	5%	6K8 Ω
R587	ERDS2TJ472T	CARBON	0.25W	5%	4K7 Ω
R588	ERDS2TJ222T	CARBON	0.5W	5%	2K2 Ω
R589	ERDS1TJ680	CARBON	0.5W	5%	68 Ω
R601	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R602	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820 Ω
R603	ERJ8GEYJ103	S.M.CARB	.125W	5%	10K Ω
R604	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R605	ERD25TJ331	CARBON	0.25W	5%	330 Ω
R606	ERD25TJ331	CARBON	0.25W	5%	330 Ω

Cct Ref	Parts Number	Description			
R607	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820 Ω
R608	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270 Ω
R609	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω
R610	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R611	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R612	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R613	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω
R615	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R616	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R622	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R636	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R645	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R647	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R648	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω
R650	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R651	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R652	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R654	ERJ6GEYJ622	S.M.CARB	0.1W	5%	6K2 Ω
R655	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R658	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R659	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R660	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R701	ERQ12AJ101	FUSIBLE	0.5W	5%	100 Ω ⚠
R702	ERQ12HJ8R2	FUSIBLE	0.5W	5%	8R2 Ω ⚠
R703	ERG2FJ821	METAL	2W	5%	820 Ω ⚠
R704	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56K Ω
R705	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R706	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2 Ω
R707	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R708	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39K Ω
R709	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39K Ω
R710	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω
R711	ERG1SJ101	METAL	1W	5%	100 Ω
R712	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω
R803	ERC12ZGK335D	SOLID	0.5W	10%	3M3 Ω
R805	ERD25TJ473	CARBON	0.25W	5%	47K Ω
R806	ERD25TJ100	CARBON	0.25W	5%	10 Ω
R807	ERD25TJ332	CARBON	0.25W	5%	3K3 Ω
R809	ERD25TJ681	CARBON	0.25W	5%	680 Ω
R810	ERW2PKR27	WOUND	2W	10%	R27 Ω ⚠
R811	ERW2PKR27	WOUND	2W	10%	R27 Ω ⚠
R812	ERD75TAJ825	CARBON	0.75W	5%	8M2 Ω ⚠
R813	ERF7ZK2R7	WOUND	7W	20%	2R7 Ω ⚠
R814	ERD25TJ473	CARBON	0.25W	5%	47K Ω
R815	ERD25TJ222	CARBON	0.25W	5%	2K2 Ω
R850	ERD25TJ122	CARBON	0.25W	5%	1K2 Ω
R852	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R853	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R854	ERG2FJ223	METAL	2W	5%	22K Ω ⚠
R855	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω
R856	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω
R857	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω
R858	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω
R859	ERJ6GEYJ753	S.M.CARB	0.1W	5%	75K Ω
R860	ERQ1CJP2R2	FUSIBLE	1W	10%	2R2 Ω ⚠
R861	ERDS2TJ221T	CARBON	0.5W	5%	220 Ω
R862	ERD25TJ272F	CARBON	0.25W	5%	2K7 Ω
R863	ERDS1TJ560	CARBON	0.5W	5%	56 Ω
R864	ERDS1TJ151	CARBON	0.5W	5%	150 Ω
R865	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R867	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R868	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R869	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R870	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7 Ω
R871	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R872	ERG1SJ183	METAL	1W	5%	18K Ω

Cct Ref	Parts Number	Description			
R873	ERG1SJ223	METAL	1W	5%	22K Ω
R874	ERJ6GEYJ204	S.M.CARB	0.1W	5%	200K Ω
R876	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R877	ERW2PKR47	WOUND	2W	10%	R47 Ω ⚠
R878	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R913	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R914	ERJ6GEYJ822	S.M.CARB	0.1W	5%	8K2 Ω
R915	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5 Ω
R916	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R919	ERQ14AJW390	FUSIBLE	0.25W	5%	39 Ω ⚠
R920	ERQ14AJW390	FUSIBLE	0.25W	5%	39 Ω ⚠
R921	ERDS2TJ471T	CARBON	0.5W	5%	470 Ω
R922	ERD25TJ393	CARBON	0.25W	5%	39K Ω
R923	ERD25TJ393	CARBON	0.25W	5%	39K Ω
R924	ERDS1FJ390	CARBON	0.5W	5%	39 Ω ⚠
R925	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R926	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R927	ERDS2TJ471T	CARBON	0.5W	5%	470 Ω
R928	ERD25TJ5R6	CARBON	0.25W	5%	5R6 Ω
R929	ERDS1FVJ471	RESISTOR	0.5W	5%	470 Ω ⚠
R930	ERD25TJ5R6	CARBON	0.25W	5%	5R6 Ω
R931	ERDS1FJ390	CARBON	0.5W	5%	39 Ω ⚠
R935	ERQ14AJW3R9	FUSIBLE	0.25W	5%	3R9 Ω ⚠
R936	ERQ1CJP331	FUSIBLE	1W	5%	330 Ω ⚠
R951	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R952	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R953	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R954	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R1051	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R1062	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270 Ω
R1063	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R1101	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1102	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R1103	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R1104	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330 Ω
R1105	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1106	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R1107	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R1108	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R1109	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1110	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1111	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R1112	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R1113	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1114	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1115	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R1116	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1117	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1118	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1119	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1120	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1121	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1123	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1125	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1126	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1127	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1128	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω
R1129	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8 Ω
R1130	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R1131	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R1132	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1133	ERJ6GEYJ272	S.M.CARB	0.1W	5%	2K7 Ω
R1136	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω
R1137	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1138	ERJ6GEYJ105	S.M.CARB	0.1W	5%	1M Ω
R1139	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω

Cct Ref	Parts Number	Description			
R1140	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R1141	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R1142	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1145	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1146	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1147	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1148	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1149	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R1151	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1152	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1154	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1155	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1156	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1157	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R1158	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1159	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1160	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R1161	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R1163	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1164	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1165	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1166	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1167	ERJ6GEYJ100	S.M.CARB	0.1W	5%	10 Ω
R1168	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47K Ω
R1169	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1170	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω
R1171	ERJ6GEYJ224	S.M.CARB	0.1W	5%	220K Ω
R1172	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22K Ω
R1173	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R1174	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω
R1175	ERJ6GEYJ225	S.M.CARB	0.1W	5%	2M2 Ω
R1178	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R1180	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R1190	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R1251	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R1252	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R1253	ERJ6GEYJ332	S.M.CARB	0.1W	5%	3K3 Ω
R1254	ERJ6GEYJ512	S.M.CARB	0.1W	5%	5K1 Ω
R1255	ERJ6GEYJ912	S.M.CARB	0.1W	5%	9K1 Ω
R2101	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R2102	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2103	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2109	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18K Ω
R2110	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω
R2111	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220 Ω
R2112	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R2113	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6 Ω
R2114	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2115	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R2116	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2117	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2118	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R2119	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2120	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2 Ω
R2302	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R2303	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2304	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R2305	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R2306	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R2308	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R2309	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R2310	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R2311	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R2312	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R3001	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3002	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω

Cct Ref	Parts Number	Description			
R3003	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3004	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R3005	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3006	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R3007	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3008	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R3009	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3010	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3011	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3012	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3013	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3014	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R3015	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3016	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R3017	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3018	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470 Ω
R3019	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3020	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R3021	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3022	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R3023	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12K Ω
R3024	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R3025	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3026	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3044	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3046	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3047	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3048	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R3049	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3050	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R3057	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3202	ERDS1TJ151	CARBON	0.5W	5%	150 Ω
R3203	ERDS1TJ151	CARBON	0.5W	5%	150 Ω
R3204	ERG2FJ221	METAL	2W	5%	220 Ω ⚠
R3205	ERG2FJ221	METAL	2W	5%	220 Ω ⚠
R3207	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3208	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R3209	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3210	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15K Ω
R3213	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R3214	ERJ6GEYJ683	S.M.CARB	0.1W	5%	68K Ω
R3215	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R3216	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3219	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R3220	ERJ6GEYJ683	S.M.CARB	0.1W	5%	68K Ω
R3221	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R3224	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R3225	ERJ6GEYJ683	S.M.CARB	0.1W	5%	68K Ω
R3226	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R3227	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R3228	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27K Ω
R3229	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10K Ω
R3230	ERJ6GEYJ302	S.M.CARB	0.1W	5%	3K Ω
R3231	ERJ6GEYJ122	S.M.CARB	0.1W	5%	1K2 Ω
R3232	ERJ6GEYJ242	S.M.CARB	0.1W	5%	2K4 Ω
R3233	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω
R3234	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω
R3402	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3403	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω
R3404	ERJ6GEYJ242	S.M.CARB	0.1W	5%	2K4 Ω
R3405	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100K Ω
R3406	ERJ6GEYJ301	S.M.CARB	0.1W	5%	300 Ω
R3407	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12K Ω
R3408	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω
R3409	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75 Ω
R3601	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω

Cct Ref	Parts Number	Description				
R3602	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3603	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3604	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3605	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3606	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100 Ω	
R3607	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7 Ω	
R3608	ERJ6GEYJ752	S.M.CARB	0.1W	5%	7K5 Ω	
R3609	ERJ6GEY0R00	S.M.CARB	0.1W	5%	0 Ω	
R3610	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1K Ω	
R3613	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω	
R3614	ERJ6GEYJ391	S.M.CARB	0.1W	5%	390 Ω	

CAPACITORS

C102	ECJ2VF1H103Z	ELECT	350V	10nF	
C103	ECJ2VF1H104Z	ELECT	350V	100nF	
C105	ECUV1H560JCX	S.M. CAP	50V	56pF	
C106	ECUV1H560JCX	S.M. CAP	50V	56pF	
C107	ECJ2VF1H104Z	ELECT	350V	100nF	
C108	ECEA1CU100	ELECT	16V	10µF	
C109	ECUV1H102JCX	S.M. CAP	50V	1nF	
C110	ECJ2VF1H103Z	ELECT	350V	10nF	
C111	ECA1HMR33GB	ELECT	50V	0.33µF	
C114	ECJ2VF1H104Z	ELECT	350V	100nF	
C115	ECUV1H103ZFX	S.M. CAP	50V	10nF	
C116	ECA1CM221GB	ELECT	16V	220µF	
C117	ECJ2VF1H103Z	ELECT	350V	10nF	
C118	ECJ2VF1H104Z	ELECT	350V	100nF	
C119	ECA1CM221GB	ELECT	16V	220µF	
C120	ECA1CM221GB	ELECT	16V	220µF	
C121	ECUV1H561KBX	S.M. CAP	50V	560pF	
C124	ECUV1H220JCX	S.M. CAP	50V	22pF	
C125	ECUV1H100DCX	S.M. CAP	50V	10pF	
C133	ECUV1H104KBX	S.M. CAP	50V	100nF	
C134	ECUV1H104KBX	S.M. CAP	50V	100nF	
C135	ECUV1H104KBW	S.M. CAP	50V	100nF	
C136	ECUV1H104KBX	S.M. CAP	50V	100nF	
C138	ECUV1H104KBX	S.M. CAP	50V	100nF	
C252	ECJ2VB1H103K	ELECT	350V	10nF	
C253	ECA1HM4R7GB	ELECT	50V	4.7µF	
C255	ECA1EM101GB	ELECT	25V	100µF	
C256	ECJ2VB1H103K	ELECT	350V	10nF	
C257	ECA1HM4R7GB	ELECT	50V	4.7µF	
C260	ECA1VM102GB	ELECT	35V	1nF	
C261	ECA1VM102GB	ELECT	35V	1nF	
C263	ECA1HM010GB	ELECT	50V	1µF	
C264	ECA1HHG222E	ELECT	50V	2200µF	
C266	ECA1HM010GB	ELECT	50V	1µF	
C267	ECJ2VB1H104K	ELECT	350V	100nF	
C268	ECJ2VB1H104K	ELECT	350V	100nF	
C270	ECJ2VB1H104K	ELECT	350V	100nF	
C301	ECJ2VB1C104K	ELECT	350V	100nF	
C302	ECJ2VB1C104K	ELECT	350V	100nF	
C303	ECJ2VB1C104K	ELECT	350V	100nF	
C304	ECA1CM100GB	ELECT	16V	10µF	
C351	ECUV1H090DCN	S.M. CAP	50V	90pF	
C352	ECUV1H090DCN	S.M. CAP	50V	90pF	
C353	ECUV1H090DCN	S.M. CAP	50V	90pF	
C354	ECQM2104KZ	FILM	250V	100nF	
C355	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C356	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C357	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C360	ECKC3D152J	CERAMIC	2KV	1.5nF	⚠
C361	ECA1HMR47GB	ELECT	50V	0.47µF	
C363	ECA1VM471GB	ELECT	35V	470µF	
C364	ECJ2VF1H103Z	ELECT	350V	10nF	
C366	ECA1CM100GB	ELECT	16V	10µF	
C451	ECUV1H102JX	S.M. CAP	50V	1nF	

Cct Ref	Parts Number	Description			
C453	ECUV1H152KBX	S.M. CAP	50V	1.5pF	
C454	ECUV1H223KBM	S.M. CAP	50V	22nF	
C455	ECA1HM100GB	ELECT	50V	10µF	
C456	ECA1HHG221B	ELECT	50V	220µF	
C458	ECQB1222JF3	FILM	100V	2.2nF	
C459	222236516154	FILM	160V	150nF	
C461	ECCR2H270J	CERAMIC	500V	27pF	
C508	ECQV1H105JZ	FILM	50V	1µF	
C509	ECA1VM470B	ELECT	35V	47µF	
C510	ECUV1H104KBX	S.M. CAP	50V	100nF	
C551	ECKC3D152J	CERAMIC	2KV	1.5nF	⚠
C552	ECWH15H102JN	FILM	1500V	1nF	
C557	ECKC2H471J	CERAMIC	500V	470pF	⚠
C558	ECA1HHG471E	ELECT	50V	470µF	
C561	ECA1EHG102B	ELECT	25V	1000µF	
C562	ECKC2H101J	CERAMIC	500V	100pF	⚠
C563	ECA2EHG220B	ELECT	250V	20µF	
C564	ECEA2AN2R2SB	ELECT	100V	2.2µF	
C565	ECQP1H273J	FILM	100V	2700µF	
C566	ECKC2H471J	CERAMIC	500V	470pF	⚠
C567	ECA1EHG102B	ELECT	25V	1000µF	
C568	ECKC2H471J	CERAMIC	500V	470pF	⚠
C569	ECKC2H102J	CERAMIC	500V	1nF	⚠
C580	ECA2VM010B	ELECT	63V	1µF	
C581	ECWF2824JBB	FILM	200V	820nF	⚠
C582	ECWF2H474J	FILM	500V	470nF	⚠
C584	ECWH15H123JN	CAPACITO	1500V	12nF	⚠
C585	ECQB1H103J	FILM	50V	10nF	
C586	ECWF2H224J	FILM	500V	220nF	⚠
C601	ECUV1H104KBX	S.M. CAP	50V	100nF	
C602	ECA1HM101GB	ELECT	50V	100µF	
C603	ECUV1H102JCX	S.M. CAP	50V	1nF	
C604	ECJ2VF1H223Z	ELECT	350V	22nF	
C605	ECA1HM101GB	ELECT	50V	100µF	
C606	ECA1HM3R3GB	ELECT	50V	3.3µF	
C607	ECJ2VF1H104Z	ELECT	350V	100nF	
C608	ECUV1H153KBX	S.M. CAP	50V	15nF	
C609	ECUV1H153KBX	S.M. CAP	50V	15nF	
C610	ECUV1H153KBX	S.M. CAP	50V	15nF	
C611	ECUV1H153KBX	S.M. CAP	50V	15nF	
C612	ECUV1H153KBX	S.M. CAP	50V	15nF	
C613	ECUV1H153KBX	S.M. CAP	50V	15nF	
C614	ECUV1H050CCX	S.M. CAP	50V	50pF	
C615	ECUV1H050CCX	S.M. CAP	50V	50pF	
C616	ECA1HM101GB	ELECT	50V	100µF	
C617	ECUV1H223KBX	S.M. CAP	50V	22nF	
C618	ECA1CM221GB	ELECT	16V	220µF	
C619	ECJ2VB1H473K	ELECT	350V	47nF	
C620	ECA1HM101GB	ELECT	50V	100µF	
C621	ECJ2VB1C104K	ELECT	350V	100nF	
C622	ECUV1H683KBX	S.M. CAP	50V	68nF	
C623	ECUV1H102JCX	S.M. CAP	50V	1nF	
C624	ECJ3VB1C474K	ELECT	3.5KV	470nF	
C625	ECJ3VB1C474K	ELECT	3.5KV	470nF	
C626	ECJ3VB1C474K	ELECT	3.5KV	470nF	
C627	ECJ3VB1C474K	ELECT	3.5KV	470nF	
C628	ECA1CM100GB	ELECT	16V	10µF	
C629	ECUV1H104KBX	S.M. CAP	50V	100nF	
C630	ECUV1H100DCX	S.M. CAP	50V	10pF	
C631	ECUV1H683ZFX	S.M. CAP	50V	68nF	
C633	ECUV1H271JCX	S.M. CAP	50V	270pF	
C634	ECUV1H271JCX	S.M. CAP	50V	270pF	
C635	ECUV1H180JCX	S.M. CAP	50V	18pF	
C636	ECUV1H271JCX	S.M. CAP	50V	270pF	
C637	ECUV1H101JCX	S.M. CAP	50V	100pF	
C638	ECUV1H471JCX	S.M. CAP	50V	470pF	

Cct Ref	Parts Number	Description			
C639	ECUV1H332KBM	S.M. CAP	50V	3.3nF	
C640	ECKC2H391J	CERAMIC	500V	390pF	⚠
C701	ECA1HHG101B	ELECT	50V	100µF	
C702	ECUV1H103KBX	S.M. CAP	50V	10nF	
C703	ECEA1HGE100	ELECT	50V	10µF	
C704	ECQB1H223K	FILM	50V	22nF	
C705	ECQB1H152K	FILM	50V	1.5nF	
C804	ECQE2A474MWB	FILM	250V	470nF	
C805	ECA0JHG102B	ELECT	6.3V	1nF	
C806	ECKWNA101MBC	CERAMIC	400V	100µF	
C807	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C808	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C809	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C810	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C811	ECOS2GA221CA	ELECT	400V	220µF	
C814	ECKC3D222JB	CERAMIC	2KV	2200pF	⚠
C815	ECKC1H471J	CERAMIC	50V	470pF	
C816	EEUFC1E820B	CERAMIC	25V	82pF	
C817	ECQE6103KFW	FILM	600v	10nF	⚠
C818	ECKWNA332MEC	CERAMIC	250V	3.3nF	
C819	ECQB1H182K	FILM	50V	1.8nF	
C850	ECKC3D471JB	CERAMIC	2KV	470pF	⚠
C851	ECA2CM221E	ELECT	160V	220µF	
C852	ECA2CHG101E	ELECT	160V	100µF	
C853	ECKC2H471J	CERAMIC	500V	470pF	⚠
C854	ECA1EM102GB	ELECT	25V	100µF	
C855	ECKC2H471J	CERAMIC	500V	470pF	⚠
C856	ECA1AHG222B	ELECT	10V	2200µF	
C857	ECKC2H471J	CERAMIC	500V	470pF	⚠
C858	ECEA1HGE102	ELECT	50V	1000µF	
C859	ECJ2VF1H104Z	ELECT	350V	100nF	
C860	ECA1HM101GB	ELECT	50V	100µF	
C862	ECJ2VF1H104Z	ELECT	350V	100nF	
C863	ECA1HM101GB	ELECT	50V	100µF	
C864	ECJ2VF1H104Z	ELECT	350V	100nF	
C865	ECA1CM100GB	ELECT	16V	10µF	
C866	ECJ2VF1H104Z	ELECT	350V	100nF	
C867	ECA1CM100GB	ELECT	16V	10µF	
C868	ECA1CM100GB	ELECT	16V	10µF	
C869	ECA1EM101GB	ELECT	25V	100µF	
C870	ECA1EM471GB	ELECT	25V	470µF	
C871	ECA1CM102B	ELECT	16V	1000µF	
C872	ECA1CM471GB	ELECT	16V	470µF	
C873	ECA1CM100GB	ELECT	16V	10µF	
C875	ECA2CM220B	ELECT	160V	22µF	
C876	ECA1HHG101B	ELECT	50V	100µF	
C902	ECA1VM101GB	ELECT	35V	100µF	
C903	ECUV1H472KBX	S.M. CAP	50V	4.7nF	
C904	ECUV1H472KBX	S.M. CAP	50V	4.7nF	
C906	ECUV1H471KBX	S.M. CAP	50V	470pF	
C908	ECUV1H151JCX	S.M. CAP	50V	150pF	
C909	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C910	ECKC2H472J	CERAMIC	500V	4.7nF	⚠
C911	ECUV1H151JCX	S.M. CAP	50V	150pF	
C912	ECEA2CU100	ELECT	160V	10µF	
C913	ECA1HM101GB	ELECT	50V	100µF	
C914	ECA1HM101GB	ELECT	50V	100µF	
C916	ECEA2CGE100	ELECT	160V	10µF	
C950	ECJ2VB1C104K	ELECT	350V	100nF	
C1061	ECUV1H103KBX	S.M. CAP	50V	10nF	
C1062	ECEA1HU101	ELECT	50V	100µF	
C1063	ECUV1H331JCX	S.M. CAP	50V	330pF	
C1101	ECJ2VF1H104Z	ELECT	350V	100nF	
C1102	ECA0JM101G	ELECT	6.3V	100µF	
C1103	ECUV1H220JCX	S.M. CAP	50V	22pF	
C1104	ECUV1H220JCX	S.M. CAP	50V	22pF	

Cct Ref	Parts Number	Description			
C1105	ECUV1H101JCX	S.M. CAP	50V	100pF	
C1106	ECKC2H681J	CERAMIC	500V	680pF	⚠
C1108	ECJ2VB1H333K	ELECT	350V	33nF	
C1111	ECA1CM100GB	ELECT	16V	10µF	
C1112	ECUV1H103KBX	S.M. CAP	50V	10nF	
C1115	ECJ3VB1C474K	ELECT	3.5KV	470nF	
C1116	ECUV1H472KBX	S.M. CAP	50V	4.7nF	
C1117	ECJ2VF1H104Z	ELECT	350V	100nF	
C1118	ECUV1H103KBX	S.M. CAP	50V	10nF	
C1119	ECUV1H221JCX	S.M. CAP	50V	220pF	
C1120	ECJ2VF1H104Z	ELECT	350V	100nF	
C1121	ECUV1H221JCX	S.M. CAP	50V	220pF	
C1123	ECUV1H471JCX	S.M. CAP	50V	470pF	
C1124	ECUV1H391JCX	S.M. CAP	50V	390pF	
C1125	ECUV1H391JCX	S.M. CAP	50V	390pF	
C1126	ECUV1H391JCX	S.M. CAP	50V	390pF	
C1127	ECUV1H221JCX	S.M. CAP	50V	220pF	
C1129	ECUV1H270JCX	S.M. CAP	50V	27pF	
C1130	ECA1CM221GB	ELECT	16V	220µF	
C2101	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2102	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2103	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2104	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2105	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2106	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2107	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2108	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2109	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2110	ECUV1H102JCX	S.M. CAP	50V	1nF	
C2111	ECA1CM100GB	ELECT	16V	10µF	
C2112	ECA1CM100GB	ELECT	16V	10µF	
C2113	ECA1HM3R3GB	ELECT	50V	3.3µF	
C2114	ECJ2VF1H104Z	ELECT	350V	100nF	
C2115	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2116	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2117	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2118	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2119	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2120	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2121	ECA1CM100GB	ELECT	16V	10µF	
C2122	ECJ2VF1H104Z	ELECT	350V	100nF	
C2123	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2124	ECUV1H560JCX	S.M. CAP	50V	56pF	
C2125	ECUV1H470JCX	S.M. CAP	50V	47pF	
C2126	ECUV1H560JCX	S.M. CAP	50V	56pF	
C2127	ECUV1H010CCX	S.M. CAP	50V	1pF	
C2128	ECUV1H010CCX	S.M. CAP	50V	1pF	
C2129	ECA1CM102B	ELECT	16V	1000µF	
C2130	ECA1CM331B	ELECT	16V	330µF	
C2131	ECJ2VF1H103Z	ELECT	350V	10nF	
C2132	ECJ2VF1H103Z	ELECT	350V	10nF	
C2134	ECJ2VF1H103Z	ELECT	350V	10nF	
C2135	ECA1HM101GB	ELECT	50V	100µF	
C2136	ECJ2VF1H104Z	ELECT	350V	100nF	
C2137	ECA1CM100GB	ELECT	16V	10µF	
C2138	ECUV1H471KBX	S.M. CAP	50V	470pF	
C2139	ECUV1H221JCX	S.M. CAP	50V	220pF	
C2140	ECA1HM101GB	ELECT	50V	100µF	
C2141	ECUV1H152JCX	S.M. CAP	50V	1.5pF	
C2301	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C2302	ECA1CM470GB	ELECT	16V	47µF	
C2303	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C2304	ECA1CM470GB	ELECT	16V	47µF	
C3001	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C3002	ECUV1H222JCX	S.M. CAP	50V	2.2nF	
C3003	ECA1CM470GB	ELECT	16V	47µF	

Cct Ref	Parts Number	Description		
C3005	ECUV1H561JCX	S.M. CAP	50V	560pF
C3006	ECJ3VB1C474K	ELECT	3.5KV	470nF
C3007	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3008	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3009	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3010	ECA1CM470GB	ELECT	16V	47µF
C3012	ECUV1H561JCX	S.M. CAP	50V	560pF
C3013	ECJ3VB1C474K	ELECT	3.5KV	470nF
C3014	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3015	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3016	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3017	ECA1CM470GB	ELECT	16V	47µF
C3019	ECUV1H561JCX	S.M. CAP	50V	560pF
C3020	ECJ3VB1C474K	ELECT	3.5KV	470nF
C3021	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3022	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3023	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3024	ECA1CM470GB	ELECT	16V	47µF
C3026	ECUV1H561JCX	S.M. CAP	50V	560pF
C3027	ECJ3VB1C474K	ELECT	3.5KV	470nF
C3028	ECUV1H222JCX	S.M. CAP	50V	2.2nF
C3029	ECA1HM101GB	ELECT	50V	100µF
C3032	ECUV1H271JCX	S.M. CAP	50V	270pF
C3033	ECUV1H271JCX	S.M. CAP	50V	270pF
C3034	ECUV1H271JCX	S.M. CAP	50V	270pF
C3035	ECUV1H271JCX	S.M. CAP	50V	270pF
C3101	ECUV1H104KBX	S.M. CAP	50V	100nF
C3102	ECUV1E104KBX	S.M. CAP	25V	100nF
C3111	ECUV1H391JCX	S.M. CAP	50V	390pF
C3112	ECUV1H271JCX	S.M. CAP	50V	270pF
C3201	ECUV1H103KBX	S.M. CAP	50V	10nF
C3202	ECUV1H103KBX	S.M. CAP	50V	10nF
C3203	ECUV1H561JCX	S.M. CAP	50V	560pF
C3204	ECUV1H561JCX	S.M. CAP	50V	560pF
C3206	ECUV1H561JCX	S.M. CAP	50V	560pF
C3207	ECUV1H561JCX	S.M. CAP	50V	560pF
C3209	ECUV1H103KBX	S.M. CAP	50V	10nF
C3210	ECJ2VB1C104K	ELECT	350V	100nF
C3211	ECUV1H103KBX	S.M. CAP	50V	10nF
C3212	ECUV1H103KBX	S.M. CAP	50V	10nF
C3213	ECUV1H103KBX	S.M. CAP	50V	10nF
C3214	ECJ2VB1C104K	ELECT	350V	100nF
C3215	ECUV1H103KBX	S.M. CAP	50V	10nF
C3216	ECA1CM330GB	ELECT	16V	33pF
C3217	ECJ2VB1C104K	ELECT	350V	100nF
C3402	ECUV1H101JCX	S.M. CAP	50V	100pF
C3403	ECA1HM101GB	ELECT	50V	100µF
C3403	ECEA1HU101	ELECT	50V	100µF
C3405	ECUV1H180JCX	S.M. CAP	50V	18pF
C3406	ECUV1H271JCX	S.M. CAP	50V	270pF
C3407	ECUV1H271JCX	S.M. CAP	50V	270pF
C3408	ECA1HM101GB	ELECT	50V	100µF
C3601	ECA1HM101GB	ELECT	50V	100µF
JSE28	ECUV1H104KBX	S.M. CAP	50V	100nF

TERMINALS AND LINKS

JK2301	JPJ841101320	RCA SOCKET
JK3001	0350808500	SCART SOCKET
JK3201	TJB8E026	AV TERMINAL

SWITCHES

S802	ESB92S11B	SWITCH ⚠
S1251	EVQ21405R	SWITCH
S1252	EVQ21405R	SWITCH
S1253	EVQ21405R	SWITCH
S1254	EVQ21405R	SWITCH
S1255	EVQ21405R	SWITCH

Cct Ref	Parts Number	Description

SCHEMATIC DIAGRAMS FOR MODEL

TX-28DK1

(EURO-4 CHASSIS)

IMPORTANT SAFETY NOTICE
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

NOTE

1. RESISTOR
   All resistors are carbon ¼W resistor, unless marked otherwise.
   Unit of resistance is OHM (Ω) (k=1,000, M=1,000,000)
2. CAPACITORS
   All capacitors are ceramic 50V unless marked otherwise.
   Unit of capacitance is μF unless otherwise stated.
3. COIL
   Unit of inductance is μH, unless otherwise stated.
4. TEST POINT
   Test Point Position
5. EARTH SYMBOL
   Chassis Earth (Cold)
   Line Earth (Hot)
6. VOLTAGE MEASUREMENT
   Voltage is measured by a d.c. voltmeter.
   Measurement conditions are as follows:

Power source	a.c. 220V-240V, 50Hz
Receiving Signal	Colour Bar signal (RF)
All customer controls	Maximum position

7.
   Indicates the Video signal path
   Indicates the Audio signal path

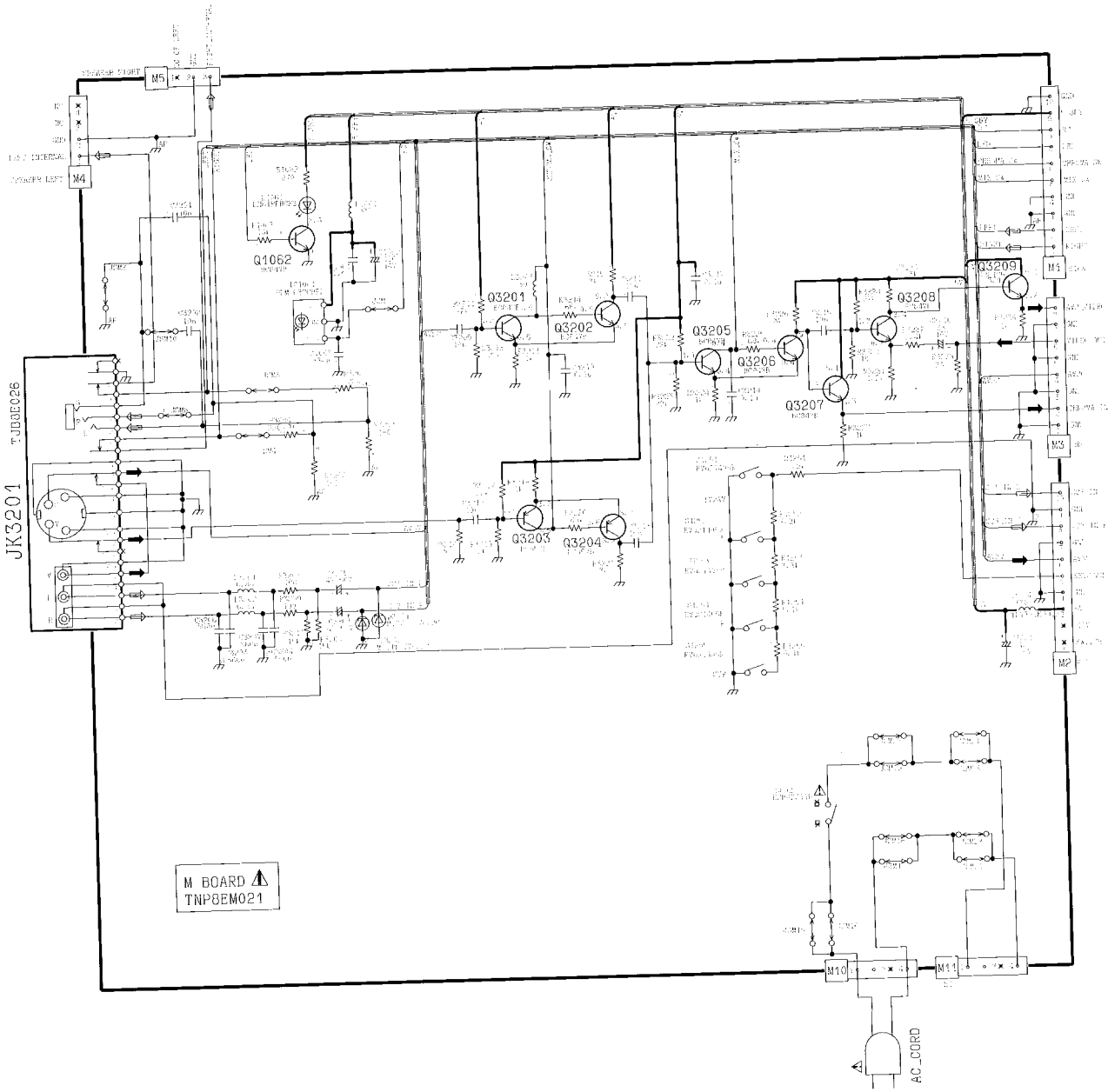
These schematic diagrams are the latest at time of printing and are subject to change without notice.

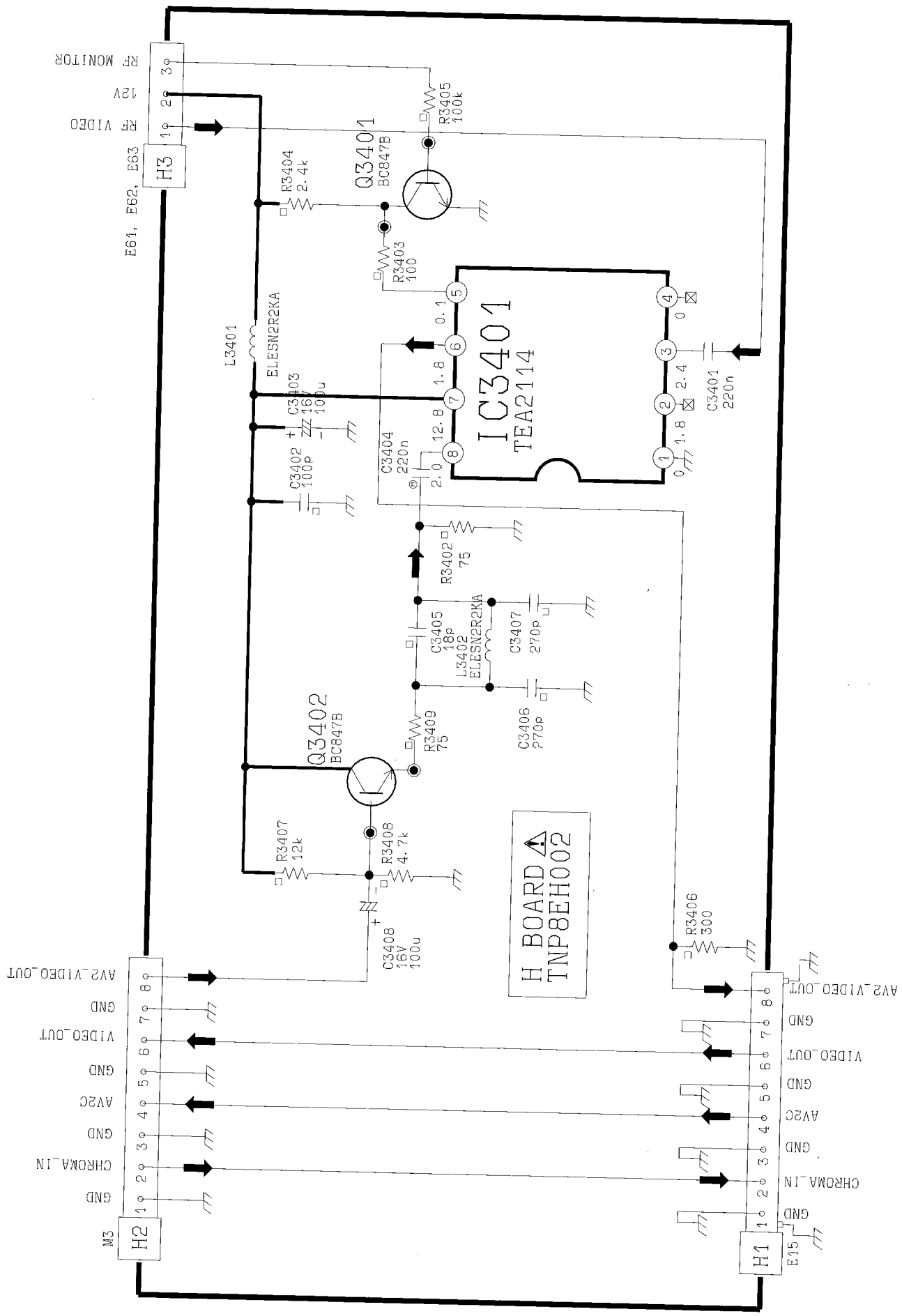
REMARKS

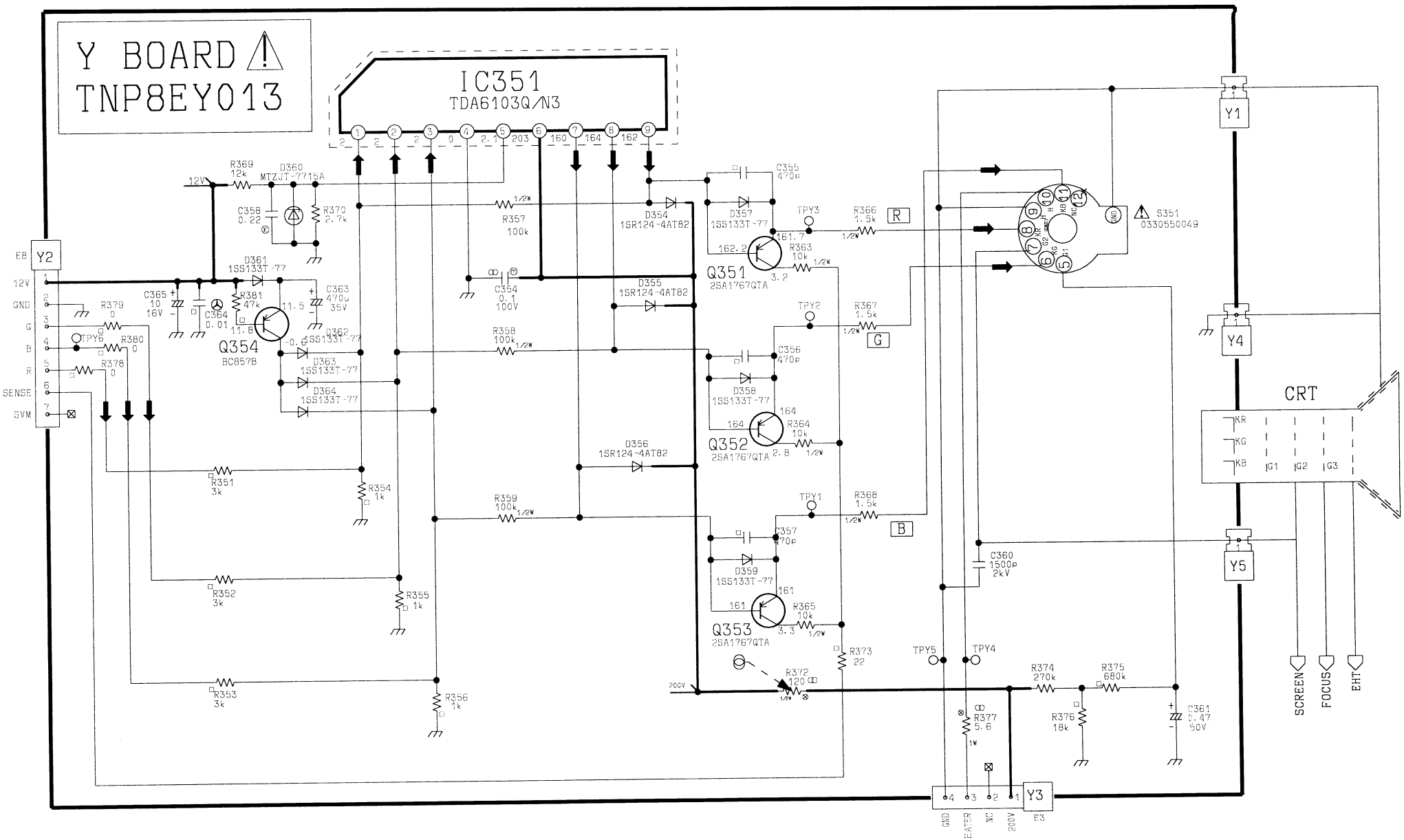
a. Do not touch the hot part, or the hot and cold parts at the same time, as you are liable to a shock hazard.
b. Do not short circuit the hot and cold circuits as electrical components may be damaged.
c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously as this may cause fuse failure. Connect the earth of the instruments to the earth connection of the circuit being measured.
d. Make sure to disconnect the power plug before removing the chassis.

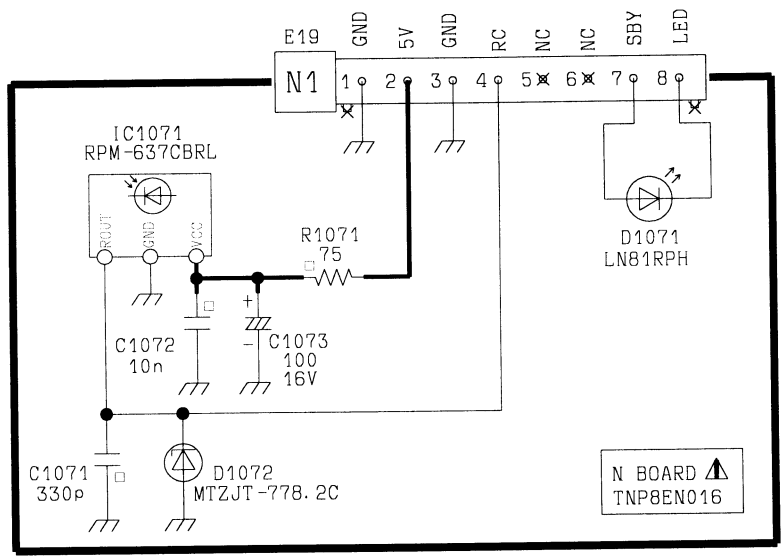
NOTE

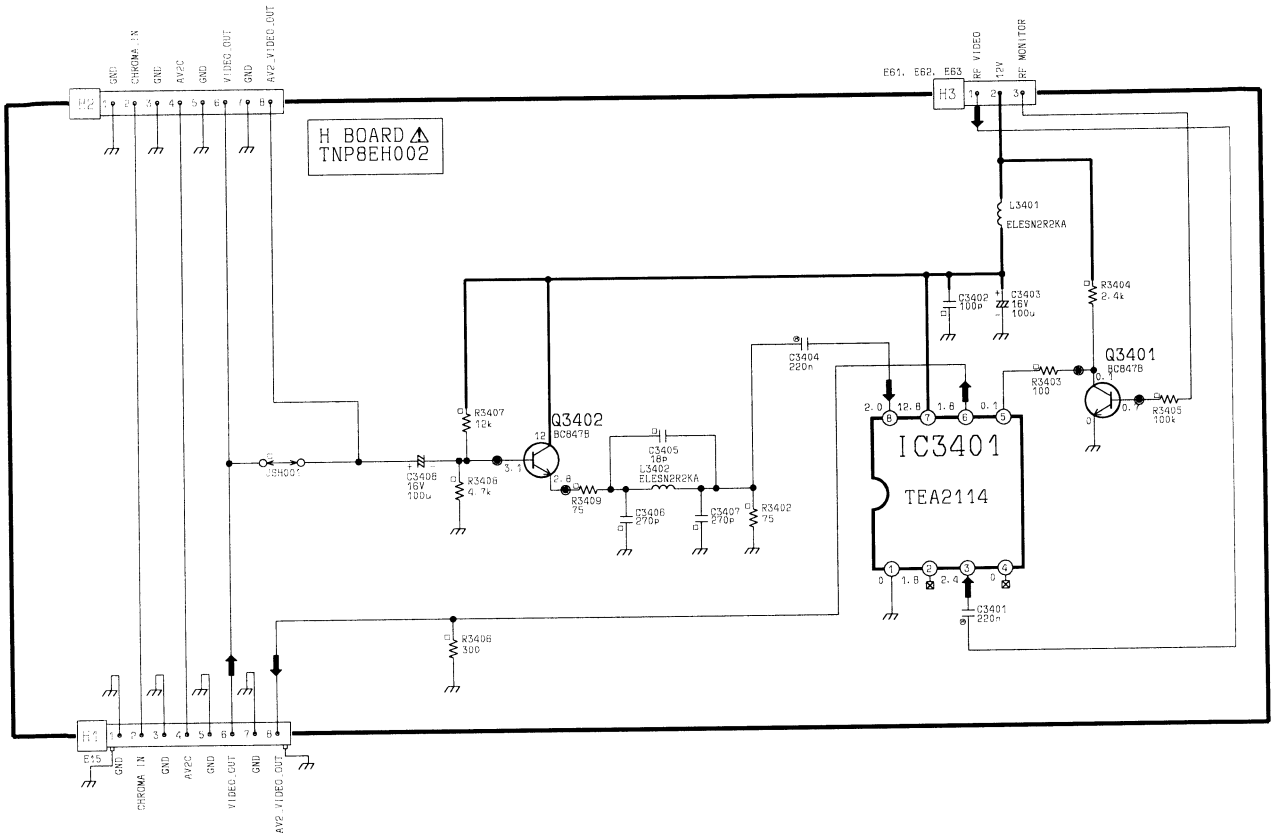
1. The Power Supply Circuit contains a circuit area, which uses a separate power supply to isolate the earth connection. The circuit is defined by HOT and COLD indications in the schematic diagram. All circuits, except the Power Circuit, are COLD.

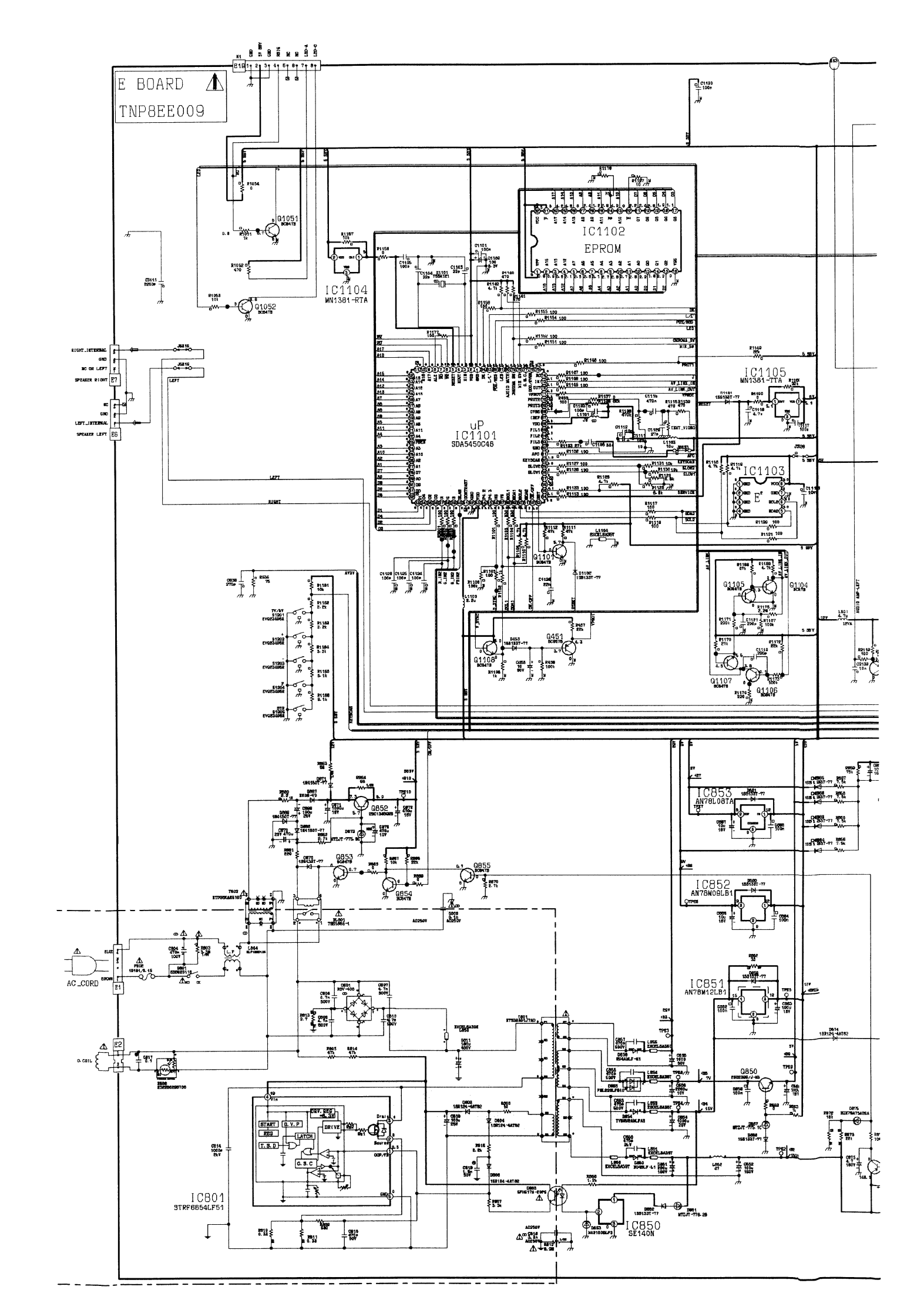

M5
M4
Q1062
Q3201
Q3202
Q3205
Q3206
Q3207
Q3208
Q3209
Q3203
Q3204
M1
M3
M2
JK3201
M BOARD
TNP8EM021
M10
M11
AC_CORD

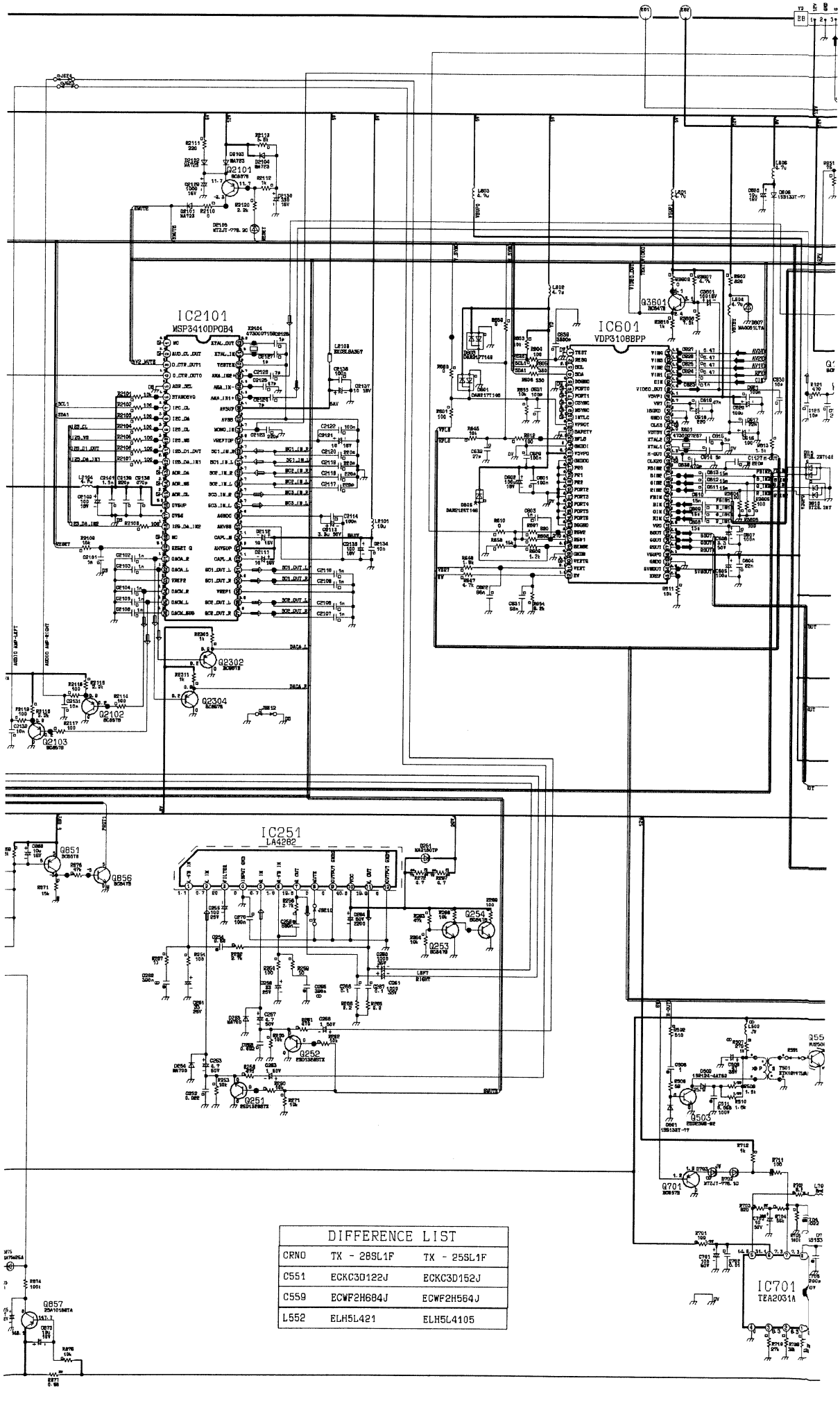

RF MONITOR
12V
RF VIDEO
H3
E61, E62, E63
R3404 2.4k
Q3401 BC847B
R3405 100k
R3403 100
L3401
ELESN2R2KA
C3403 16V 100u
C3402 100p
C3404 220n
IC3401 TEA2114
C3401 220n
R3402 75
C3405 18p
L3402 ELESN2R2KA
C3407 270p
C3406 270p
Q3402 BC847B
R3409 75
R3407 12k
R3408 4.7k
C3408 16V 100u
H BOARD TNP8EH002
R3406 300
AV2_VIDEO_OUT
GND
VIDEO_OUT
GND
AV2C
GND
CHROMA_IN
GND
H2
M3
H1
E15


Y BOARD ⚠
TNP8EY013
IC351
TDA6103Q/N3
Y2
Y1
Y4
Y5
Y3
CRT
KR
KG
KB
G1
G2
G3
SCREEN
FOCUS
EHT
S351
0330550049
Q351
2SA1767QTA
Q352
2SA1767QTA
Q353
2SA1767QTA
Q354
BC857B
R
G
B
12V
GND
SENSE
SVM
E8
E3
GND
HEATER
NC
200V

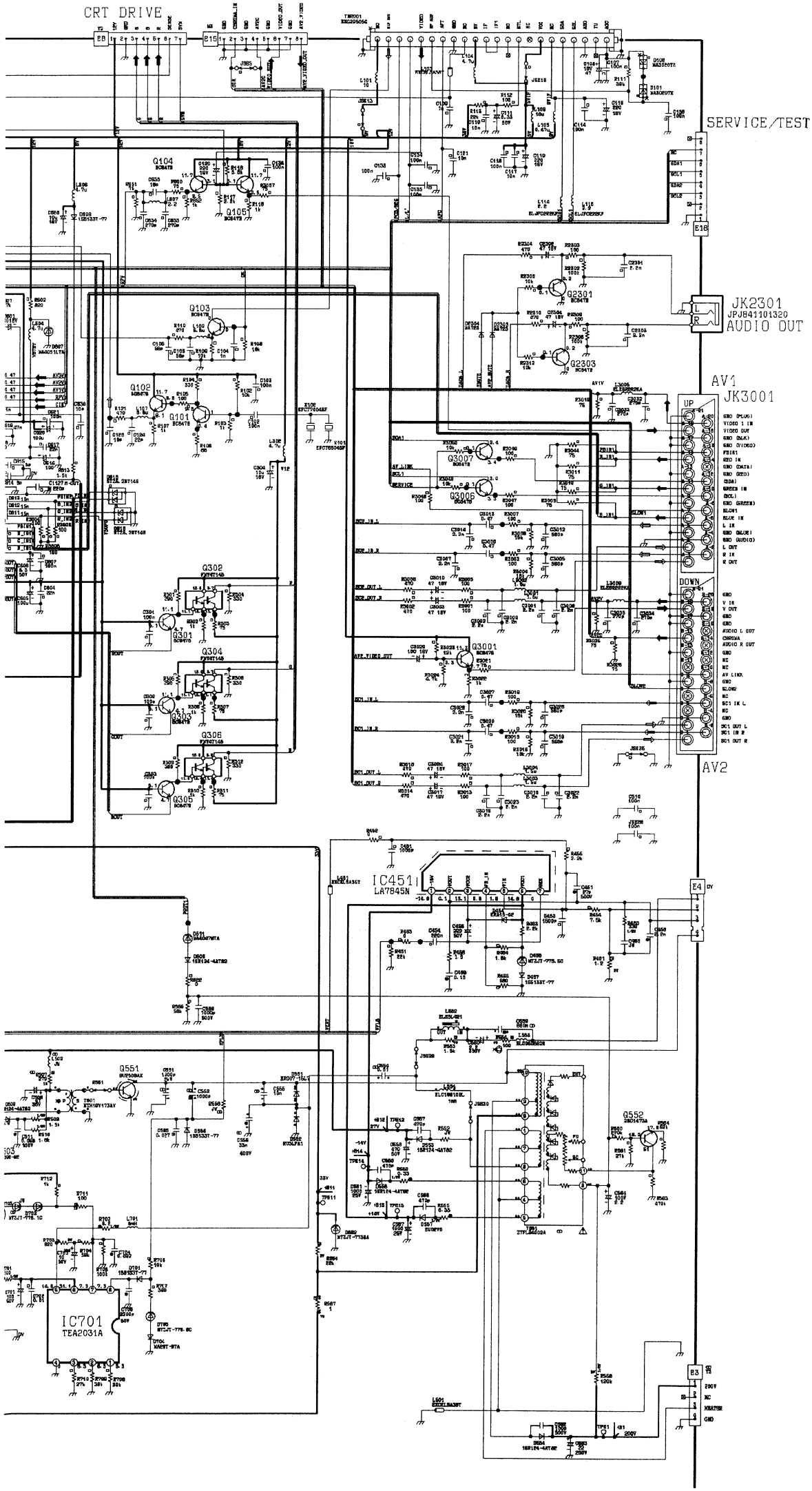

E19
N1
GND
5V
GND
RC
NC
NC
SBY
LED
1
2
3
4
5
6
7
8
IC1071
RPM-637CBRL
ROUT
GND
VCC
R1071
75
D1071
LN81RPH
C1072
10n
C1073
100
16V
C1071
330p
D1072
MTZJT-778.2C
N BOARD
TNP8EN016


H BOARD
TNP8EH002
H2
GND
CHROMA IN
GND
AV2C
GND
VIDEO OUT
GND
AV2 VIDEO OUT
H3
E61, E62, E63
RF VIDEO
12V
RF MONITOR
L3401
ELESN2R2KA
C3402
100p
C3403
16V
100u
R3404
2.4k
Q3401
BC847B
R3403
100
R3405
100k
C3404
220n
R3407
12k
Q3402
BC847B
C3405
18P
L3402
ELESN2R2KA
C3408
16V
100u
R3406
4.7k
R3409
75
C3406
270p
C3407
270p
R3402
75
IC3401
TEA2114
C3401
220n
R3408
300
H1
E15
GND
CHROMA IN
GND
AV2C
GND
VIDEO OUT
GND
AV2 VIDEO OUT


E BOARD
TNP8EE009
IC1102
EPROM
IC1104
MN1381-RTA
IC1105
MN1381-RTA
IC1103
uP
IC1101
SDA5450C46
IC853
AN78L08TA
IC852
AN78M08LB1
IC851
AN78M12LB1
IC801
STRF6654CLF51
IC850
SE140N
AC_CORD
Q1051
Q1052
Q1107
Q1108
Q451
Q852
Q853
Q854
Q855
Q850
Q1104
Q1105
Q1106
Q1107
RIGHT_INTERNAL
SPEAKER RIGHT
LEFT_INTERNAL
SPEAKER LEFT
LEFT
RIGHT

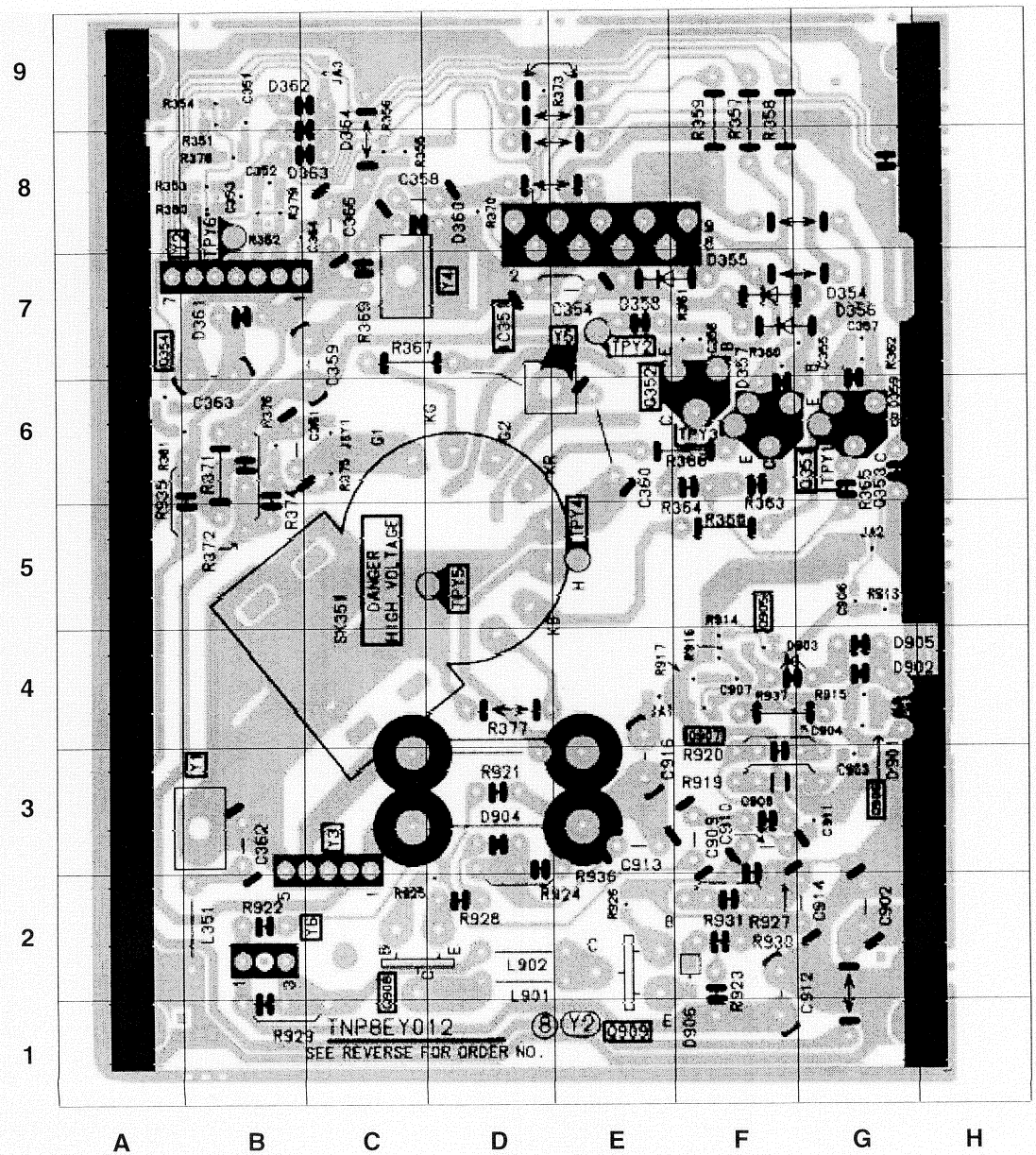


DIFFERENCE LIST		
CRNO	TX - 28SL1F	TX - 25SL1F
C551	ECKC3D122J	ECKC3D152J
C559	ECWF2H684J	ECWF2H564J
L552	ELH5L421	ELH5L4105


CRT DRIVE
SERVICE/TEST
JK2301
JPJ641101320
AUDIO OUT
AV1
JK3001
AV2
IC451
LA7845N
IC701
TEA2031A
Q104
Q105
Q103
Q102
Q101
Q2301
Q2303
Q3007
Q3005
Q3001
Q302
Q301
Q304
Q303
Q306
Q305
Q551
Q552
UP
DOWN

Y - BOARD TNP8EY012

TRANSISTORS	
Q909	E1
Q908	C2
Q907	F4
Q906	G3
Q905	F5
Q354	A7
Q353	G6
Q352	F6
Q351	F6
DIODES	
D906	F1
D905	G4
D904	D3
D902	G4
D901	G3
D364	C9
D363	C8
D362	B9
D361	B7
D360	D8
D359	G6
D358	E7
D357	F7
D356	G7
D355	F7
D354	G7
TEST POINTS	
TPY6	B8
TPY5	D5
TPY4	E5
TPY3	F6
TPY2	E7
TPY1	G6
IC'S	
IC351	E8



CONDUCTOR VIEWS ANSICHT DER LEITERBAHNEN

E - BOARD TNP8EE009

TRAN'S		DIODES		D558	L4
Q3601	L8	D3103	B7	D557	M4
Q3007	M9	D3101	B7	D556	K1
Q3001	N8	D3102	B7	D555	N3
Q3006	N10	D2161	G9	D554	M4
Q2304	I7	D2105	G10	D553	K4
Q2303	M6	D2104	F9	D552	J2
Q2301	I7	D2103	G10	D551	K3
Q2103	I8	D2102	G9	D511	M5
Q2102	H8	D1103	F8	D502	I2
Q2101	G10	D1102	F7	D501	I2
Q1108	F9	D1101	G7	D457	L5
Q1107	C7	D1051	A9	D456	L5
Q1106	C7	D875	J5	D454	L5
Q1105	C7	D874	J4	D453	F9
Q1104	C7	D873	B5	D254	C5
Q1101	F7	D871	A5	D253	C5
Q1052	A9	D870	871	D252	B5
Q1051	C8	D869	B4	D251	B4
Q951	J9	D868	B4	**IC'S**	
Q950	J9	D867	A3	IC2101	H8
Q857	J4	D866	I9	IC1105	F7
Q856	F9	D865	I9	IC1104	C9
Q855	J5	D864	I10	IC1103	F8
Q854	B4	D863	G9	IC1102	D10
Q853	B4	D862	N10	IC1101	D8
Q852	B5	D861	J9	IC1051	A10
Q850	F5	D860	I10	IC852	I10
Q701	J5	D859	H5	IC851	G5
Q552	N3	D858	E5	IC850	H4
Q551	K1	D857	E5	IC801	G2
Q503	I2	D855	F4	IC701	K5
Q451	F8	D854	G4	IC601	L7
Q394	K9	D853	H3	IC451	L5
Q305	K9	D852	I4	IC251	D6
Q303	K9	D851	I4	**TP'S**	
Q302	J9	D850	H4	TPE14	M5
Q301	K9	D806	G2	TPE13	M4
Q253	C4	D805	H2	TPE12	K4
Q252	C4	D804	H1	TPE11	N5
Q252	C4	D803	H1	TPE10	B5
Q251	D4	D802	G2	TPE9	E5
Q105	M8	D801	E1	TPE8	F5
Q104	M9	D705	J5	TPE7	I9
Q103	F10	D704	K5	TPE6	J10
Q102	G10	D703	K5	TPE5	G5
Q101	H10	D702	K5	TPE4	G5
		D701	K5	TPE3	E5
		D609	M5	TPE2	I5
		D607	L9	TPE1	M4